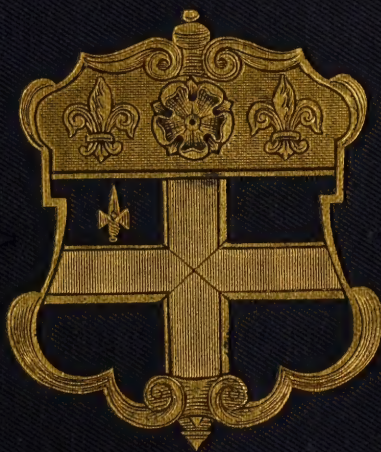


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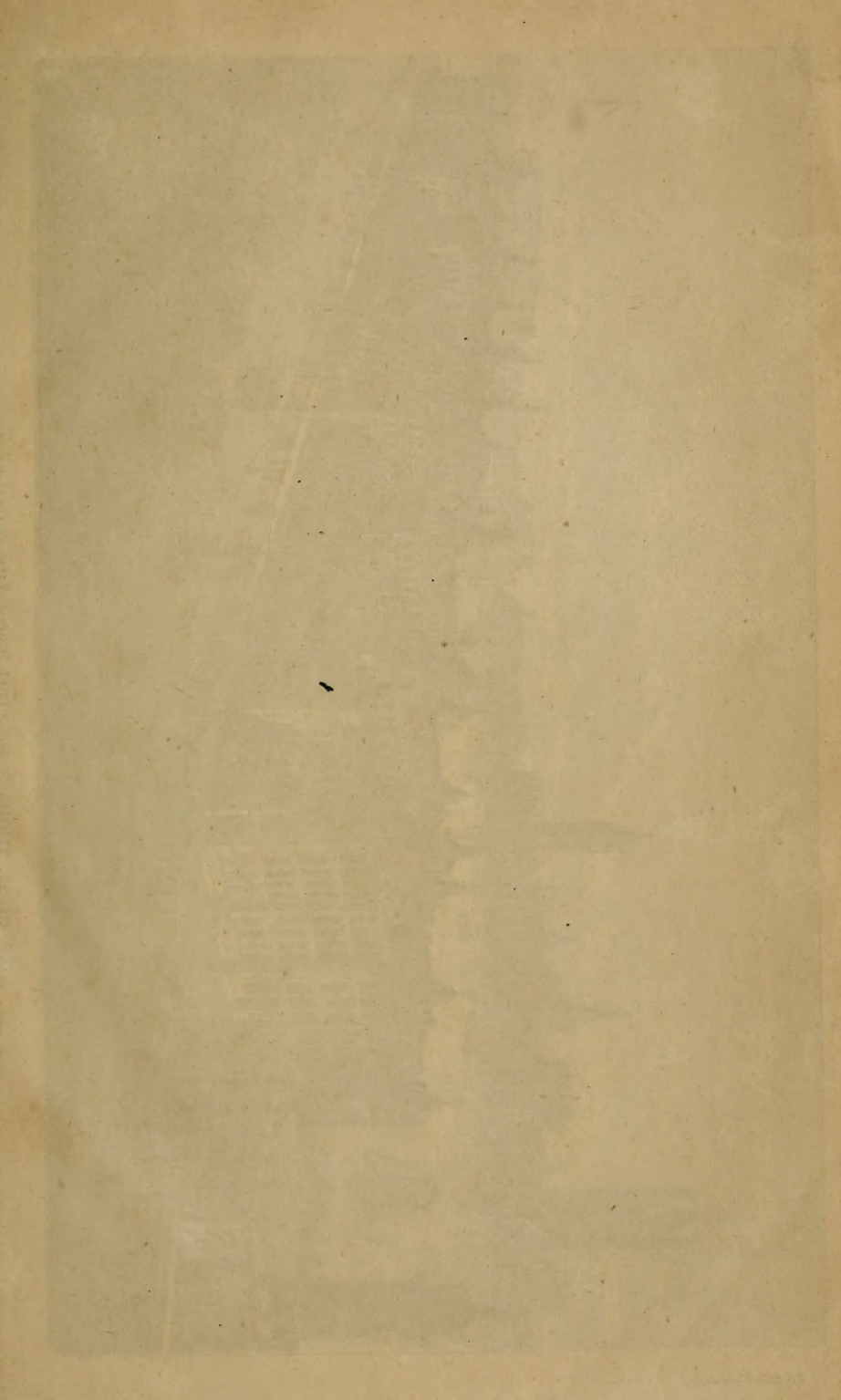
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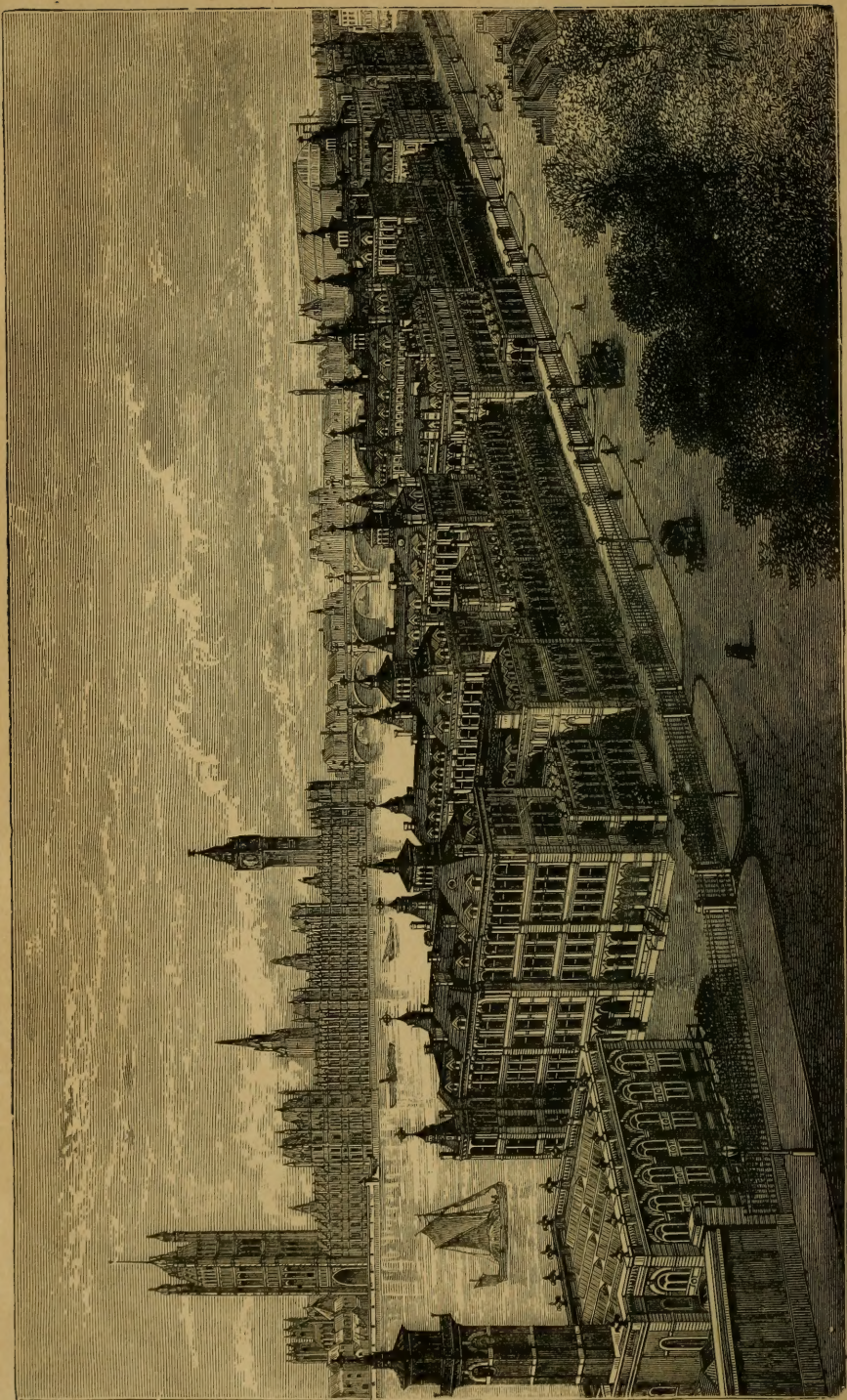


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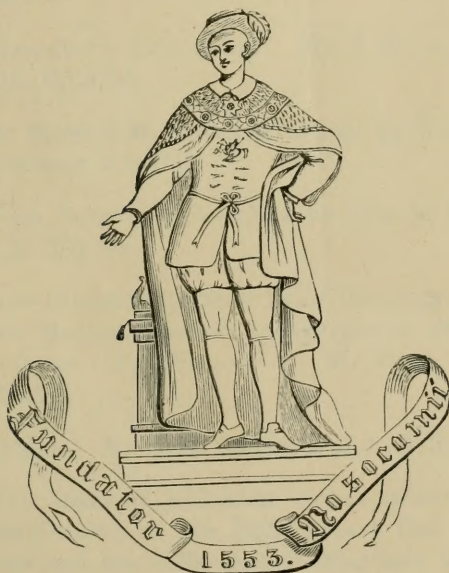


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# POLYNEURITIS IN RELATION TO GESTATION AND THE PUERPERIUM.

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General considerations, historical, symptomatology, generalised polyneuritis (cases), localised polyneuritis (cases), ætiology, diagnosis, prognosis, treatment, references.

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## *General Considerations.*

THE subject of puerperal neuritis has received such scant attention in this country that little excuse is needed for the present paper. The disease is rare, it is true, but the question of its existence has long passed beyond the stage of doubt, and in all probability its rarity will grow less in proportion as the attention of the profession is directed towards it. That the term rare is with justice applied may be gathered from the fact that Siredey (1) (quoted by Tuillant) could find only six cases of paralysis of any kind among 8000 accouchements at the Hôpital Lariboisière. In the maternity charity at St. Thomas's Hospital, with an annual rate of over 2000 confinements, no case has been observed during the past few years. Gowers, whose text-book (2) seems to include everything, makes no mention of childbearing as a cause of polyneuritis; and yet it assuredly seems not the least interesting of the various forms of that interesting disease.

That a physiological process which is inevitable with a large part of our race should in apparently healthy subjects give rise to such wide-spread nervous disorder is a striking fact, even though we can find parallels for it both in the nervous system and elsewhere.

Further, apart from the intrinsic interest attaching to the condition, a knowledge of its existence and an acquaintance with its symptoms are of importance both to obstetricians and to neurologists, if only to avoid the risk, which is a very real one, of attributing them, in spite of the patient's denials, to the excessive use of alcohol.

The neuritis with which this paper deals is found to occur at two distinct periods in the process of gestation: firstly, during the period of pregnancy; secondly, after parturition. It is essentially a multiple or toxæmic neuritis, although under certain circumstances its full characteristics of multiplicity and symmetry may not be displayed. In the writer's belief, at whatever epoch the symptoms appear, whether before or after childbirth, the pathological cause—the poison circulating in the blood—is the same; and from this point of view the two affections must be considered as, in a sense, identical. At the same time, however, it would be folly to ignore the physiological catastrophe of childbirth which separates the two. This brings with it certain dangers, some unavoidable, others more or less accidental, the effects of which upon the nervous system in general and upon certain parts of it in particular must be taken into account before this principle of identity can be maintained. But for our present purpose of exclusion it is necessary to refer only to the local nerve lesions which owe their origin to the mechanical conditions of childbirth, or to the inflammatory complications which may succeed it. These dangers consist mainly in the liability of the sacral plexus on both sides to pressure by the foetal head or the forceps during the act of delivery, and also to the spread of inflammation from local septic foci during the puerperal period. The failure to recognise the vital distinctions between these cases of local disease and those of true toxic neuritis has confused the whole question, and led to doubts being thrown on the very existence of the latter condition apart from septicæmia. In



the most recent text-book of obstetrics (3) the author discusses the various causes of local neuritis, but ignores altogether the possibility of a true polyneuritis of puerperal origin. The pathology of the two groups is so different that it is unfortunate the same term should be applied to both; obstetric neuritis would, for example, be a much more appropriate term for the traumatic inflammation of nerves initiated during parturition, even though its results are first noticed during the puerperal period. But the generic title has become so fully recognised that any protest at this date will be unavailing, and the only alternative is to avoid confusion as far as possible by careful definition of terms and selection of material. A case recorded by Lamy (4) illustrates exceedingly well the condition produced by what we should like to call "obstetric neuritis."

The patient, æt. 37, was delivered by forceps in October, 1891. At the same moment that the forceps were applied she experienced extreme pain, "as if a thousand needles were thrust into her flesh." The pain was referred to both lower limbs, but specially to the left. Immediately afterwards both limbs became completely paralysed, the bladder and rectum remaining unaffected. Five months later there was extreme wasting, with flaccid paralysis of the anterior tibial and peroneal groups of muscles in both legs. The muscles and nerves were extremely tender, and the skin hyperæsthetic. Recovery was not complete till 1896.

It is possible that the secondary neuritis in this case would not have occurred but for a morbid condition of the blood, but in face of so severe an injury to the nerves as is evidenced by the immediate development of symptoms, we must regard the toxæmic element as of quite subordinate importance in comparison with the local trauma. On the other hand, paralysis of precisely the same type and distribution may occur where both the period of onset of symptoms and the complete absence of any difficulty in the labour compel us to look for the morbid agent in the blood. In such cases only a careful weighing of the history will enable us to differentiate between a symmetrical traumatic neuritis and an incomplete polyneuritis of toxic origin.

The spread of inflammation from contiguous pelvic structures to the cords of the sacral plexus is a far less common event, and the symptoms produced rarely amount to actual paralysis. Mills (5) has published a typical case of the kind, and refers to others reported by Hunerman, Von Leyden, and Von Dorion.

Passing away from the effect of the local conditions, we may briefly advert to the possibility of a true toxæmic neuritis being set up from causes only accidentally connected with the process of gestation itself. In puerperal septicæmia, as in any other septicæmic condition, a true polyneuritis may occur, which should, of course, be entitled septicæmic neuritis whether the channel of infection happen to be the uterus or any other part of the body. There need rarely, if ever, be any difficulty in diagnosing the cause. We know that septicæmia is a cause of neuritis only when the condition is both severe and prolonged. By the exclusion of cases to which such a description is applicable from the category of puerperal neuritis, this source of error can almost with certainty be removed. It is in consequence of the neglect of this precaution that such a case as the following was recorded by Korsakow and Serbski (6), and recognised by Eulenburg (7) as an example of puerperal neuritis. The patient, aged twenty-seven, had been suffering from high fever ( $39^{\circ}$  to  $40^{\circ}$  C.) from September, 1888, to November 2nd, when laparotomy was performed, and a decomposing foetus extracted from an abscess cavity in the iliac fossa. The patient remained in a state of extreme exhaustion, though the temperature fell after the operation. The first signs of neuritis were detected on November 17th, that is after two months of high fever and septic absorption.

In the table of cases of puerperal (and so, *ex hypothesi*) toxæmic neuritis which follows, a group will be found, the inclusion of which may seem to require some explanation. In these the affection is either limited to a single nerve, or is asymmetrical. But this circumstance, if rightly considered, is not an insuperable bar to the diagnosis of toxæmic neuritis. It is true that the two most characteristic features of this affection are multiplicity and symmetry, both of which are here absent, but it is equally true that many

instances of such a selective action on the part of a circulating poison are constantly and fully recognised. We do not refuse to diagnose plumbism because one arm only is affected, though that fact will naturally make us more cautious in arriving at a conclusion. As Gowers (8) points out, symmetrical nerve lesions arising from the action of a blood poison must be due partly to local determining conditions. Sometimes these are obvious, as in the case recently recorded by the present writer (9) of a patient who, at a time when recovery from an injury to the ulnar nerve was practically complete, happened to be exposed to the infection of lead. The exposure was rapidly followed by recurrence of paralysis in the injured nerve. But more commonly the local variations which determine the incidence of the paralysis are in themselves unimportant or absolutely inappreciable, and may consist of nothing more than the slight difference in nutrition due to unequal use of corresponding muscles. Under these circumstances we are bound to look upon the condition as one of toxæmic neuritis, differing in degree only from the fully developed form, and as being in a sense a potential polyneuritis.

### *Historical.*

Until the year 1887, when Möbius (10) published his first series of cases in the 'Münchener medicinische Wochenschrift,' nothing was known of a puerperal paralysis due to multiple neuritis. Instances of the affection certainly had been recorded, but never with consciousness of their import, and rarely, if ever, with a correct diagnosis of the nerve lesion. Jolly (11), for example, in 1885 published two cases of "paraplegia during pregnancy," diagnosing them both as functional in origin. His report is too brief to make a final opinion possible, but the second case, at all events, is almost certainly one of peripheral neuritis. It has been claimed for Kast by Tuillant (12) and Eulenburg (13) that he should be given the credit of priority over Möbius for having been the first to place on record (14) an authenticated case of puerperal neuritis, although without himself recognising the connection of cause and effect. A fatal obstacle

to this claim is the very slight justification for describing the case as one of puerperal neuritis at all. The patient was delivered by forceps on April 30th, 1884. From May 10th to June 17th she had high fever, with signs of localised peritonitis. The first paralytic symptoms occurred on June 20th, eight weeks after her confinement, and after six weeks of septicæmia. If septicæmic neuritis ever does occur, and of this there is no doubt, there should not be much hesitation in deciding on its presence here.

Cases which may have been examples of puerperal neuritis occur in the literature of ten to twenty years ago, but the insufficient data which accompany them render any discussion of their nature necessarily inconclusive.

An historical retrospect must commence, then, with Möbius's article in 1887. On the basis of seven cases he described the disease as affecting specially the terminal branches of the ulnar or median nerves, or both, the affection being sometimes symmetrical, sometimes not, but in either case due to a morbid condition of the blood. He referred to the possibility of paraplegias of peripheral origin, but considered their pathogeny to be different, regarding them as the result of local trauma or inflammation. In a later publication (15), however, he revised this view, and was inclined to ascribe them, like the others, to a blood poison. It is surprising to find, two years after this, an extreme case of puerperal neuritis, which was brought before the French Academy of Medicine by Desnos, Joffroy, and Pinard (16), reported on by a committee of that body as an example of reflex action from the uterus.

Möbius followed up his original communication by further articles in 1892 (17), the whole series including more or less detailed accounts of no less than nine cases. In 1889 Whitfield (18) published the first case recorded in English literature, and in 1891 Handford (19) brought forward two, both, however, in alcoholic subjects, and so of doubtful nature. In the same year Tuillant's thesis (20) appeared, which contained an historical *résumé* and three hitherto unpublished cases. Sottas (21), in 1892, placed on record a case important on account of its extreme severity. Mills (22), in 1893, published four cases which had come under



his own observation, and four which had been reported to him by Dr. Anna Fullerton ; but all of these may be regarded as coming under the heading of "obstetric" rather than of puerperal neuritis.

The next publication of importance is that of Eulenburg (23) in 1895. In this attention was drawn to the close connection existing between the neuritis of pregnancy and that of the puerperal period ; the source of the infection was discussed, and four fresh cases were added to the list. About two thirds of the thirty-eight cases collected by Eulenburg may be regarded as examples of polyneuritis, the remainder being probably due to local causes.

The last important contribution to the subject is that by Mader (24), who on a basis of three personal observations, entered upon a lucid though somewhat dogmatic discussion, of the pathology of the affection. Since then isolated cases have been published by observers in France and Germany, which bring up the number at the present day to between thirty and forty.

### *Symptomatology.*

For the sake of convenience puerperal neuritis may be subdivided into three main groups : 1, generalised neuritis ; 2, localised polyneuritis, subdivided again according as it affects the upper or lower extremities ; and 3, neuritis affecting a single nerve with no ascertainable local cause. A cross-division will become necessary in considering the ætiology of the complaint, separating the cases which commence during the period of pregnancy from those of the puerperium ; but inasmuch as the time of onset does not materially affect the symptoms produced, this distinction may for the present be ignored.

*Generalised neuritis.*—The clinical basis of these remarks is provided by a series of thirteen cases, which have been placed on record to the present date. A fairly full abstract from the original reports will follow this general review of symptoms.

Of these thirteen cases, six occurred during pregnancy,

on an average from the fourth to the fifth month ; the remaining seven at intervals varying from two days to a fortnight after delivery. Almost without exception the first symptom noticed is pain, oftentimes very severe and of lancinating character, extending down the limbs first to be affected. As a rule, the lower extremities are attacked first and most severely. The pain is in the space of a few hours or days followed by loss of muscular power, soon increasing to complete paralysis. Rapid wasting with loss of reflexes, and more or less complete reaction of degeneration are noticed within the space of a week or two from the onset. Both muscles and nerves are tender, sometimes acutely so, but spontaneous pain after the first few days is often absent. The brunt of the disease falls most heavily, in the lower extremities, on the anterior tibial and peroneal groups of muscles, and after them, not seldom before, on the quadriceps extensor cruris ; in the arms the symptoms are most pronounced in the posterior interosseous group. At the outset the sphincters are not uncommonly slightly affected, but this symptom even where present is very transient.

Sensation—apart from the almost invariable hyperæsthesia of skin and muscles—escapes as a rule much more lightly than the motor functions. Commonly the sensory defect does not amount to more than blunting of sensibility in the fingers and toes. In the severest forms, however, anæsthesia at the periphery of the limb may be complete. In no less than five cases out of the thirteen the presence of dysphagia or tachycardia, or both, suggests implication of the vagus, while in two loss of voice points to a lesion of the spinal accessory. In two cases the cranial nerves are affected. In six there are mental symptoms, the change ranging from emotionalism to acute mania ; as a rule, however, there is nothing more than confusion and loss of memory. The ingravescient stage of the malady occupies from one to three weeks. In a minority improvement seems to occur as soon as the symptoms have reached their maximum, recovery being then complete in a few months ; but more usually these hopeful signs are delayed, and the return to health is not accomplished till from one to two years. Even then, as in alcoholic paralysis, difficulties

occur from shortening of tendons, which have to be overcome by surgical or other treatment.

The clinical picture presented by these generalised cases is that of the severer forms of alcoholic paralysis, the salient feature in each being the special susceptibility of the posterior interosseous nerve in the arm and the anterior tibial and peroneal in the leg, combined with evidence of irritation rather than of paralysis of sensory fibres. Tuilliant (25) has laid great stress on the comparative absence of anæsthesia, but against this it must be observed that it is by no means uncommon in the alcoholic type.

The mental change, to which attention has already been called, has been elevated by Korsakow (26) into "a special form of psychical disturbance associated with peripheral neuritis." Certainly in the large majority of cases severe polyneuritis, whether alcoholic, puerperal, or other, is accompanied by mental symptoms which are due to the toxic cause of the neuritis. But we do not speak of alcoholic cirrhosis of liver as a condition of liver which is commonly associated with peripheral neuritis; and, *mutatis mutandis*, Korsakow's hypothesis of a special psychosis is equally untenable.

Turning now to the cases in which the neuritis is confined either to the upper or the lower extremities, we are confronted by one fact in striking contrast to what was observed in the generalised form. In place of the special susceptibility of the nerves of the lower limbs, we find here the upper extremities involved almost twice as often as the lower (upper twelve, lower seven).

*Upper limb type.*—The type of paralysis, too, as it affects the upper limbs has suffered a noticeable change. In the generalised form the posterior nerve in the arm is most often and most severely affected. Where the upper limbs only are concerned the ulnar and median nerves are far more often implicated than any others; in fact, there is not a single example of bilateral posterior interosseous paralysis. In other respects the symptoms are similar. We find the same severe lancinating pain at the outset, the same tenderness of nerves and muscles throughout, the same rapid wasting and paralysis. But, as might be expected, consti-

tutional and mental symptoms are practically absent, and it may be a mere accident that brings the patient under medical observation, so little count is taken of her condition. Several notable exceptions are found, however, to these general rules, as in the third case reported by the author, where pain and tenderness were absent throughout.

*Lower limb type.*—This falls a little behind the generalised group in the severity of the symptoms, but very little. The difference between the two is hardly more than would be expected if there were an accidental immunity of the brachial nerves. And, indeed, the autopsy on Solowieff's (27) patient shows that the difference even in this respect may be rather apparent than real, and that the nerves of the arm may be degenerate without giving clinical evidence of their condition. In this, as in the generalised form, the muscles of the trunk occasionally suffer, and the mental functions may be impaired; as regards the local symptoms, every statement that has been made in the description of the generalised form is equally applicable to this. In six out of the seven cases the anterior crural and sciatic nerves are implicated on both sides, a fact that alone is almost sufficient to negative any suggestion of local causation.

*Single nerve type.*—On four occasions one or other ulnar nerve was attacked alone, all four being reported by Möbius. In one only could any local cause be detected, the patient in this case attributing the symptoms to her having allowed the arm to rest on an ice-cold compress which had been applied to the abdomen. The presence of septic complications also tends to cast some doubt on the true nature of this case. Möbius, however, accepts it unreservedly, and his authority is unimpeachable. In addition to these observations of Möbius, it may be mentioned that Gowers refers to a lady who after each of two confinements developed ulnar neuritis. Unfortunately no details are given.

In three cases a single sciatic nerve was involved. As explained on a previous page, it is hardly possible under such circumstances to exclude the traumatic influence of delivery, and this impression is confirmed by the striking fact that in two out of these three cases the labour had been difficult and prolonged, whereas in the thirty-six cases



which appear in the table only three have a history of difficulty in delivery. On this account, though it is thought fair to mention them, they have not been included in the case table, nor used in the statistical abstract.

*Generalised Polyneuritis.*

Of this, the rarest form, the writer has found thirteen examples on record ; five of these commenced during pregnancy, the remaining seven after delivery. Following is a brief abstract of the report of each.

CASE 1 (MM. Desnos, Joffroy, and Pinard, 28).—The patient, æt. 31, had had two previous pregnancies. When the present pregnancy commenced (February, 1887) she was in a state of extreme anæmia from recurrent uterine hæmorrhages, attributed to a hæmorrhagic metritis. The vomiting which appeared at the end of the first month soon assumed an alarming character, until the patient was unable to retain any nourishment, either fluid or solid. Towards the end of June this difficulty was to a great extent overcome, but it was then discovered that there was all but complete loss of power in the legs. The limbs were perfectly flaccid and extremely wasted, the muscles of the front of the thighs and the legs having practically disappeared. All reflexes were abolished. There was no loss of sensation and no analgesia, but complaint was made of numbness, tingling, and a sense of constriction. No contraction could be obtained to the faradic current, and galvanic irritability was much impaired. Three or four days later the arms became similarly affected, but the paralysis was not so complete, and faradic irritability was only diminished. After consultation with M. Joffroy it was decided to induce expulsion of the foetus, this occurring on July 13th. From this time forth improvement set in, though but slowly. The intellectual faculties, which had been impaired, again became clear, and the paralysis gradually disappeared from the limbs. A year later patient could walk for half an hour with the aid of a stick. Albumen was never found in the urine, and the temperature was normal throughout.

CASE 2 (reported by Whitfield, 29).—The patient, a woman 40 years of age, was delivered of a healthy child at full term on the 7th of August, 1888. As in her six preceding pregnancies, so in this, she suffered many troubles. At the end of the sixth month she was obliged to take to her bed on account of constant bilious vomiting. For a fortnight she brought up everything she took, and, in consequence, fell into such a state of prostration that induction of premature labour seemed indicated. But her condition then gradually improved, and the vomiting became less urgent. During the fortnight before her delivery the patient complained of a sensation of cold in her lower limbs, which appeared to her to be weak ; she required help in going up or coming down stairs. The confinement was normal in every way, and the following day the vomiting ceased. The temperature remained normal. On the fourth day she noticed a numbness in the legs, and acute pain in the lower limbs. At the same time she had a sensation of burning and of pins and needles in the arms and hands. On the thirteenth day after consultation with Dr. Dreschfeld it was found that she had almost entirely lost the use of her legs and arms. She had difficulty in crossing one leg over the other. The knee-jerks were abolished. The feet were in a position of forced extension on the legs, the hands were dropped, and it was impossible for her to extend the closed fist or the fingers. There was no affection of respiratory muscles. Pressure on nerve-trunks in both upper and lower limbs caused pain. Cutaneous sensibility was exaggerated in some places, diminished in others. Improvement commenced a week later, and at the time of the report had gone on to almost complete recovery.

CASE 3 (reported by Solowieff, 30).—The patient, æt. 24, came of a family subject to mental disease. When she was fifteen years of age she herself suffered from hysterical convulsions and vomiting. There is no history of alcohol. She was married in 1891, and the present pregnancy began in October of the same year. Five weeks later vomiting set in, and became so constant and severe that the patient was altogether confined to bed, where she remained till her admission to the hospital on January 1st, 1892.

On admission her temperature was normal, and remained so throughout. The pulse was rapid—130. On one occasion a trace of albumen was detected in the urine, which, with that exception, never deviated from the normal. No signs of disease were detected in any of the viscera. As regards the nervous system, the muscles and nerves of the lower limbs were excessively tender, and there was extreme wasting. Apart from the tenderness, no pain was complained of. The left knee-jerk was absent, the right very weak. The peronei, tibialis anticus, and extensor communis muscles in the legs showed the reaction of degeneration. The diaphragm acted badly. The mental condition was extremely hysterical, with great irritability and restlessness. The patient died, apparently from respiratory failure, within a month of admission. A post-mortem examination was made by Lindemann (31) with great thoroughness, the viscera of the fœtus as well as those of the mother being examined microscopically. He found extreme degenerative change in the kidneys, ranging from mere cloudy swelling in some parts to areas of coagulation necrosis in others. There was no sign of inflammation. The kidneys of the fœtus showed the same degenerative change. Both the phrenic and vagus nerves were in a state of advanced degeneration, and there were similar changes, but of less degree, in the median and peroneal nerves.

CASE 4 (reported by Charles Vinay, 32).—Patient æt. 38. Family history of phthisis, none of neurosis. There is no history of previous illness. Patient has had six children (five of whom are alive) and two miscarriages. For the first three or four months of the present pregnancy she had frequent hæmorrhages, which weakened her considerably, and during the last two months she suffered much from vomiting. During this latter period, too, she used to have pains in the calves, and tingling in the feet and hands. She could still walk, but rapidly got fatigued. Her confinement took place on August 1st, 1895, and was normal in every way. On the third day there was some general malaise, with slight elevation of temperature, which rapidly passed off. On the fourth day she tried to get up, but

found herself unable to stand on her feet, and to her great astonishment she fell to the ground. She found that she had no strength in her arms, was unable to hold the child, to carry her hands behind her head, to feed herself, or sew. She had shooting pains and numbness in all her limbs, which had considerably emaciated. When seen a month later her condition was as follows.

*Muscular system.*—Weakness greatest in quadriceps extensor, then in flexors and extensors of the thigh on the pelvis, least of all in the muscles which act on the foot.

*Upper limbs.*—Weakness is greater in the extensors both of hand and forearm than in flexors. The deltoids are also very weak. Patient is quite unable to use her hands for sewing.

*Electrical reactions.*—Diminished irritability to both currents in the muscles of the thighs, upper arms, and shoulders. No change in those of the forearm and leg.

There is no objective affection of sensation. The mental condition is clear. Both knee-jerks are abolished. Sphincters are unaffected. There is no fever and no albuminuria. The progress of the case was very satisfactory, for by November 20th recovery was nearly complete.

CASE 5 (reported by Eulenburg, 33).—Patient, æt. 27, comes of a healthy family. She has been twice married, and has had one child, which died soon after birth. She has had two attacks of rheumatic polyarthritides, which left behind some cardiac weakness. At the commencement of the present pregnancy she had been some months resident in Java. At the end of the fourth month of pregnancy it became necessary—on account of persistent vomiting—to induce abortion, an operation which was followed by repeated and severe hæmorrhage. On the eighth day the patient attempted to stand, walked a few steps, and then collapsed, feeling that all the lower half of her body was paralysed. Severe pains in the back and limbs set in; the paralysis of the lower extremities within the next twenty-four hours became complete, and within about forty-eight hours from the onset there had developed in rapid succession paralysis of both arms, and of the muscles of the back, with finally aphonia and inability to swallow. During the eight



days following the mental condition was fatuous and confused to a marked degree. The difficulty in swallowing was so extreme that for several weeks nutrition had to be maintained entirely by enemata. In this melancholy state the patient was carried on board ship, and started for home. Before the end of the journey menstruation had returned, the aphonia and paralytic dysphagia had almost disappeared, while power in the arms had been recovered as regards movements of the shoulder- and elbow-joints: the hands and lower extremities remained absolutely paralysed. The pains in the back and limbs were still very severe, and the skin of the extremities very tender to the touch; the legs below the knee were contracted in a position of flexion, the feet hanging down in extreme plantar flexion. The musculature of the whole of both lower extremities, up to the glutei, was flaccid and wasted to the last degree. The sensibility of the skin, which at the beginning was much diminished, and in the feet entirely lost, had by degrees in great measure returned. The functions of the bladder and rectum had from the first not been seriously affected.

The patient was seen on November 25th, 1894, shortly after her arrival in Europe, by Eulenburg, who found her condition as follows: "General emaciation and pallor. The muscles all over the body wasted, but particularly so those of the forearm and hand, of the anterior surface of the thigh, and of both legs below the knee. Hyperæsthesia of the skin of the lower limbs, with extreme tenderness of both muscles and nerves on pressure. Extension of the legs impossible on account of intense pain. Feet cold and slightly œdematous, the œdema extending some way up the shins. Every form of sensation somewhat blunted. Plantar reflexes present, knee-jerks absent. Complete reaction of degeneration in the muscles of the leg below the knee. As regards the upper extremity, there is symmetrical atrophy specially of the extensors of the hands and fingers, and also of the intrinsic hand muscles, with almost complete paralysis. The movements at the elbow and shoulder are almost intact. Below the elbow both muscles and nerves are very tender, but sensation otherwise is very slightly affected. Below the elbow most of the muscles show a partial re-

action of degeneration, in which both the posterior interosseous, median, and ulnar nerves participate. The muscles of the back and those clothing the posterior and lateral regions of the pelvis are much wasted, and the movements of the trunk correspondingly impaired, turning round and sitting up in bed being possible only with assistance. No affection of cranial nerves. Cerebral condition clear. Urine 1014, no albumen or sugar. Pulse somewhat rapid." By the 11th of February, 1895, the general condition was much improved in every respect. There was considerable return of power in the muscles of the forearms and hands, and of the trunk and thighs, but below the knees the change, though considerable, was less reassuring. The gastrocnemii, tibialis anticus, and extensor longus pollicis had regained some voluntary power, but the rest of the muscles were still useless, and still failed to react to the faradic current. On the whole, considering the extreme severity of the symptoms, the final result must be regarded as satisfactory, and largely due to judicious treatment.

CASE 6 (reported by Stembo, 34).—Family history good. No previous illness. Both alcohol and syphilis can be excluded. The patient is twenty-five years of age. At the beginning of the second month in the present (and first) pregnancy vomiting set in, which became quite uncontrollable, and lasted three months. Even during this period the patient began to complain of pain in her lower limbs, and when she tried to leave her bed she found she could not stand. On examination soon after the following condition was found :—The muscles of both upper and lower extremities, particularly the former, were obviously atrophied; in the legs the left peroneal region was most affected, the feet lying in the equino-varus position. All movements in the limbs could be carried out, though with little force, with the exception of dorsiflexion of the foot, the muscles subserving which were completely paralysed. Flexion and extension of the fingers was painful. The affected muscles were tender on pressure, as also the anterior tibial and peroneal nerve trunks. The left knee-jerk was absent, the right very feeble. In the upper limbs the electrical re-

actions were normal ; in the lower both peroneal groups showed complete degenerative change. Sensation in the legs was somewhat blunted ; elsewhere no alteration could be detected. There was some mental defect, consisting in loss of memory and intelligence. The pulse, respiration, and temperature were normal, the urine free from sugar and albumen. Under electrical treatment the patient soon began to improve, so that towards the end of the eighth month she could attempt to walk. At full term she bore a living child, which lived only a few days.

In the six preceding cases the symptoms commenced during the period of pregnancy. In the seven which follow they developed within a varying length of time after delivery.

CASE 7 (reported by Sottas, 35).—The patient, æt. 30, came of a family with a strong history of mental disease on both sides. In her previous five pregnancies she had always suffered severely from vomiting, which continued until her delivery, and confined her to bed on each occasion. The present pregnancy began in May, 1891. Soon after intractable vomiting came on, which kept patient in bed as usual, and necessitated rectal feeding. In December, 1891, she had a painful affection of her throat, and is said to have coughed up “skins” (? diphtheria). After this she was able to get up for a short time each day and walk about in her room, until her delivery on February 12th. This passed off without complications. Temperature rose only to 39° C., and that for but a few days. At this time she began to have severe pains in her loins and lower limbs, with numbness, tingling, and hyperæsthesia of skin. Paralysis came on, and spread so rapidly that in a fortnight it was at its maximum. Both lower limbs and the left upper extremity were in a state of complete flaccid paralysis, with marked wasting ; in the right arm the loss of power was only partial. The trunk muscles were similarly though less severely affected. Aphonia came on from complete paralysis of larynx. There was no affection of soft palate or of accommodation, nor were any of the muscles of the

face, head, or neck involved. There is no note of the action of the diaphragm or the rate of heart-beat. The sphincters were affected, there being incontinence of both urine and fæces. Electrical reactions: all the muscles of the extremities reacted badly to the coil, and most of them not at all. Sensation: both nerves and muscles were tender on pressure, and there was some hyperæsthesia of skin, with delayed sensation and loss of muscular sense. The knee-jerks were abolished. There was some slight improvement *quâ* paralysis after the first month, but patient died of phthisis three months after her confinement.

CASE 8 (reported by Lunz, 36).—C. R—, æt. 24. No history of neurosis, alcoholic excess, or syphilis. This her first confinement took place on November 5th, 1893, and, with the exception of slight perinæal rupture, was normal in every way. There was no fever, and patient got up on the ninth day. At the end of the month œdema appeared in the face and extremities, which was ascribed to anæmia. The œdema disappeared in ten days, but at about the same time, *i. e.* the beginning of December, difficulty in swallowing came on, with frequent choking attacks, and soon afterwards diplopia and giddiness. Two or three days later numbness was noticed in the right upper limb, commencing in the fingers and spreading upwards. A few days after this the lower extremities were similarly affected. Swallowing became ever more difficult, the choking attacks more frequent, and fluids often regurgitated through the nose. On December 29th she was admitted to the Moscow Hospital in the following condition:—Weakness of both sixth nerves. No optic neuritis. Paresis of the left seventh and of the lower division of the right. Deviation of the tongue to the left. Deficient action of the soft palate. Difficulty in swallowing, with occasional regurgitation of fluid through the nose. Marked weakness of both upper extremities from the shoulder downwards, the movements of flexion and extension at the elbow being, however, preserved. Slight weakness of the lower extremities in every respect, walking being possible only with assistance, and then under great difficulties. Pressure upon the nerves



and muscles of all four limbs is painful. Patient complains of numbness and tingling, especially in the fingers and toes, but has no spontaneous pain. Slight blunting of all forms of sensation is noticed, with much more marked loss of muscular sense. Elbow- and knee-jerks absent. Electrical irritability much diminished to both currents, but without qualitative changes. No affection of sphincters. No signs of visceral disease. During the next fortnight the symptoms steadily increased. For three days patient could swallow nothing. At the same time attacks of difficulty in breathing came on, and secretions accumulated in her bronchi. The pulse was rapid and often irregular. The paralysis of the lower limbs grew worse. From the middle of January there was general improvement, except in the weakness of the lower limbs. This increased, so that on January 28th all movement (except slight adduction) was abolished, and with the strongest faradic and galvanic currents only the faintest response could be obtained. From this time forth improvement became manifest, and finally recovery was complete.

CASE 9 (reported by Handford, 37).—M. K—, æt. 43, had always been a stout, florid, healthy woman. Her husband keeps a public-house, and is an habitual drunkard, but evidence of drinking habits in the patient could not be obtained. Three days after her third confinement she lost power in her legs completely, and felt “pins and needles” in the arms. This was soon followed by paralysis. She had been able to walk about up to the date of her confinement. There was loss of muscular sense, impaired cutaneous sensibility but greatly increased deep sensibility, general muscular wasting, loss of knee-jerks, and the presence of the reaction of degeneration in the muscles of the arms and legs. Improvement in six months, and recovery in twelve. This case, as Handford remarks, is probably of alcoholic origin, and merely precipitated by childbirth. On the whole, it seems better to let it stand in the list on its merits.

CASE 10 (reported by Handford, 37).—E. S—, æt. 31, married six years, three children; she suckled the last a year and a half. Difficulty in walking and weakness in

the arms came on immediately after her confinement two years ago. On admission in July, 1888, she could not stand, and could only feed herself with one hand with a spoon. The legs were very feeble, and occasionally jumped up involuntarily. The knee-jerks and superficial reflexes were totally absent. Cutaneous sensibility was much diminished in the arms and legs. There was complete paralysis of both third nerves. No optic neuritis, and sight was good. There was inco-ordination and loss of muscular sense.

Five years after onset there was no appreciable alteration, except that voluntary movements of the arms were more irregular, and the left was much weaker than the right. No rigidity of legs. Thighs well nourished, but much muscular wasting in the left leg below the knee. Handford discusses the diagnosis between tabes, multiple sclerosis, and neuritis, deciding in favour of the last. Unfortunately no notes of electrical reactions are given, and a final decision is hardly possible. Much of the evidence certainly supports Handford's conclusions, but some of the symptoms, particularly the permanent paralysis of the third nerves and the condition of the arms, point to implication of spinal cord, and very probably both lesions were present.

CASE 11 (reported by Korsakow, 38).—Patient *æt.* 28. Towards the end of pregnancy she had *œdema* of legs, pains in the sacral region, and in the sciatic area on both sides. On October 3rd she was delivered of a dead decomposing *foetus*, with no loss of blood and no subsequent fever. Three days later she developed acute mania, which continued for months. The patient was first seen by Korsakow three weeks after her confinement. At that time almost all the muscles of the lower limbs were parietic, but particularly the adductors. *Anæsthesia* was well marked, being most pronounced in the area of distribution of the lumbar plexus. In the extremities there were *par-æsthesiæ*, and pains both spontaneous and on pressure. There was both retention of urine and constipation. The weakness increased until the lower limbs became completely paralysed; it extended to the upper limbs, affecting par-

ticularly the long extensors of the fingers and the inter-ossei, and finally attacked the muscles of the trunk. While the paralysis was spreading, spasmodic attacks, sometimes clonic, sometimes choreic, sometimes athetotic in character, occurred in all parts. At the worst there were twitchings of the face muscles, difficulty in swallowing, and transient affection of speech. The muscles wasted considerably, and lost their electrical irritability. Three years later the feet were still in the equino-varus position, but otherwise muscular power had been regained; the knee-jerks returned after four years, and mental recovery was complete.

CASE 12 (reported by Mader, 39).—The patient, *æt.* 33, was delivered at the end of July, 1860. Both pregnancy and puerperal period were absolutely normal. The first symptoms—weakness of all the extremities, and increasing mental confusion—were noticed two days after her confinement. When first seen, five weeks later, the symptoms were common to both arms and legs, though more pronounced in the latter. They consisted in pain and tenderness of both muscles and nerves. On December 11th the muscles of the lower extremities showed complete reaction of degeneration, the *tibialis anticus* being the only one that reacted even to the galvanic current. (ACC. > KCC., contraction sluggish.) Three months later the patient was walking about.

CASE 13 (reported by Mader, 39).—Patient *æt.* 37. This, her ninth confinement, was prolonged; the placenta had to be removed manually, and the operation was followed by much hæmorrhage. Still patient recovered, and everything went well for a fortnight. Then (before she had left her bed) cramp-like pains and fever set in, without any pathological change to account for them. This elevation of temperature (reaching 38° and 39° C.) went on for three months. The pains were followed by paresis of both arms and legs, which after a time went on to complete paralysis of all four limbs. The extremities were anæsthetic as regards touch, position, and pain, though on deep pressure both muscles and nerves were tender. Extreme

and rapid wasting occurred. The sphincters were not affected. The patient had nocturnal delirium, with both hallucinations and delusions, at which she would laugh next day. She was confined to her bed for a year, and even after two years her gait was still laborious, and her fingers clumsy.

### *Localised or Partial Polyneuritis.*

The previous cases have been abstracted somewhat fully, as they may be considered to display the characteristics of puerperal neuritis in their fullest development. In those examples of a more limited extent which follow, the difference is one of degree and not of kind. How superficial the difference may be is illustrated by Case 3 in the above list. It is included in the list as one of universal neuritis, though clinically the symptoms were limited to the lower extremities, and it was only the evidence secured by the autopsy (Lindemann) that demonstrated the full extent of the lesions. The number of these partial cases already placed on record is too great for anything more detailed than a tabular statement, and their exact description becomes unnecessary, since no fresh principle is involved. To this category the writer is able to add three hitherto unrecorded cases.

CASE 1.—E. C—, æt. 29, March 26th, 1892. The family history contains nothing of importance, neither neurotic nor phthisical taint.

*Previous history.*—Health has always been good. She had scarlet fever in childhood, and influenza about a year ago. Excessive use of alcohol is denied; patient states that she has taken two pints of beer a day, and spirits only occasionally.

*Present illness.*—Patient dates her illness back to the commencement of October last, when she was attacked by vomiting, which resisted all treatment, and confined her to bed. She became pregnant in the preceding May or June. The vomiting occurred at all times of the day, and persisted with varying degrees of severity till her confinement on February 10th of the present year. This followed a normal



course in every respect, and the child is now alive and well. Pains in the lower limbs, with some tenderness on pressure, were noticed about a fortnight after delivery ; and at about the same time the soles of the feet became tender, and the toes numb. It is somewhat difficult to ascertain the exact time at which loss of power began, as patient has not been getting about much since October, but it seems to have been simultaneous with the affection of sensation. Two or three weeks later patient noticed that the left arm was tender, but this has now passed off. Appetite (since the cessation of vomiting) has been good and sleep undisturbed. Bowels confined.

*On examination.*—Patient is an anxious-looking woman, who lies in bed with the left leg drawn up. The tongue is dry and pale. No disease of either thoracic or abdominal viscera can be detected.

*Nervous system.*—The right leg is extended, the left kept flexed and adducted at the knee. Any attempt to straighten it causes great pain, referred to the back of the knee and the thigh muscles. The feet are in a position of extreme plantar flexion, and almost in a straight line with the legs. Muscular wasting is very pronounced, and affects all groups of both lower extremities ; it is most marked in the muscles on the anterior surface of the thigh. Motor power is very slight in all segments of the limbs, particularly in the flexors and extensors of the leg on the thigh, and the flexors of the thigh on the abdomen, while in the dorsal flexors of the foot it is practically absent. The muscles are extremely tender on pressure. The knee-jerks are abolished. Electrical reactions : anterior tibial and peroneal muscles to faradic current of painful strength give a very feeble response. To the voltaic current their irritability is also greatly reduced. ACC. = KCC. at 14 ma. The quadriceps extensor gives a hardly perceptible response to any strength of current. The calf muscles show slighter changes. On both sides the condition is the same. Sensation : in addition to the muscular tenderness already described, there is marked cutaneous hyperæsthesia of the soles of the feet. In the rest of the limb tactile sensation is blunted, but nowhere completely absent. The superficial reflexes are brisk.

Sphincters are unaffected. The mental condition is distinctly weakened. Patient often contradicts statements that she has just made, and evidently the memory is very deficient. The urine contains neither sugar nor albumen. Temperature is normal. Pulse 120. Weight 104 lbs. The treatment consisted in the application of the constant current daily, with massage and passive movements to relieve the contractures.

April 4th.—Some improvement in the power of the legs. Temp. 98.4°, pulse 122.

8th.—The faradic and constant current are each applied for ten minutes daily to the affected muscles.

10th.—Pulse 94, the first time it has been below 100. Temperature still normal.

25th.—The calf muscles now act well to the faradic current.

May 7th.—Patient is able to walk with support.

17th.—Marked improvement in the condition of the muscles; the quadriceps and anterior tibial muscles now react fairly well, and are filling out.

30th.—Pulse for the first time below 90; henceforth the rate is practically normal.

June 14th.—Patient has gained three pounds in the past week. Tenderness of muscles has disappeared, and the legs are getting fat.

21st.—Patient has gained six pounds and three quarters in the week.

30th.—All the muscles now react well to the faradic current with the exception of the left extensor communis digitorum.

On July 16th the patient was discharged well. Weight 130 lbs. Knee-jerks still absent.

CASE 2.—E. H.—, æt. 21, admitted September 3rd, 1894; died November 26th, 1894.

*Family history.*—Two brothers died of phthisis.

*Personal history.*—Health has always been good. Has not been addicted to alcohol.

*Present illness.*—Patient's first pregnancy commenced in October, 1893. In January, 1894, she had paroxysmal

attacks of pain in both thighs. The first definite symptom of loss of power occurred in May. In the meantime the pain in the thighs got worse, and a month before her confinement extended to both legs below the knee; it was so severe as to prevent her from sleeping. For a time she was unable to pass her urine, but she rapidly recovered from this. Her confinement took place in July: no instruments were used, and the labour was not specially prolonged, but it resulted in a perinæal rupture, which remained untreated until the patient's admission to the hospital. For a fortnight after delivery the patient noticed that the weakness in her lower limbs was rapidly increasing, and with this she had numbness and tingling in the left leg. After her confinement, too, there was loss of control over both sphincters, which was probably due to local causes.

*On examination.*—So far as can be made out, the upper extremities are normal. The condition of the lower is as follows:—Both show general wasting of muscles, the right more than the left. The feet are in the position of extreme plantar flexion. On the right side there is complete loss of power in both flexors and extensors of the toes and of the ankle-joint. The flexors and extensors of the leg on the thigh are almost powerless. On the left side the extent of the paralysis is similar, but there is still moderate power of extension and flexion at the knee-joint. Sensation (right side) normal. Left side: partial anæsthesia on the inner side of the leg, toe, and dorsum of foot and sole; elsewhere sensation is normal. The muscles are, however, tender on pressure. Of the superficial reflexes all are present except the plantar and gluteal. The knee-jerks are present, but weak; particularly hard to obtain on the right side. There is a rupture of perinæum extending into the sphincter. For an area of two inches around the anus sensation is markedly impaired; the impairment includes all forms of sensation, but pain more than touch. There is retention of urine and incontinence of fæces. The mental condition is clear. Patient is unable to raise herself to a sitting position on account of weakness in the muscles of the back. No sign of bone disease can be made out. Chest: both lungs and heart appear to be normal. The pulse is 144. Temperature

normal. Abdomen: the spleen is just perceptible to the touch. Urine 1008, acid, no albumen.

October 5th.—For the last fortnight the temperature has been slightly elevated at night from time to time, occasionally rising to 100°. Pulse is 132. The left knee-jerk not obtained. The right is present. Sensation is much impaired about the feet. Electrical reactions: to faradic current no contraction from any of the muscles of the left leg and foot; on the right side some slight contraction of the calf muscles only. Voltaic irritability much diminished. KCC. in most of the muscles greater than ACC.

November 2nd.—No contraction obtained with the faradic current in either leg. In the right thigh the sartorius and rectus contracted feebly, but not the biceps. No contraction from any of the muscles of the left thigh. Voltaic current: contractions difficult to obtain even with large currents.

On November 26th patient was suddenly attacked by dyspnoea, and died. At the post-mortem both lungs were found tuberculous, some of the lesions being recent, some of old standing. A white adherent clot was found in the trunk of the pulmonary artery at its entrance to the left lung. No morbid changes were found in the heart or kidneys. The spleen was large and soft. The pelvic organs were quite normal. No naked-eye changes were seen in the brain or spinal cord. The sciatic, anterior crural, and external popliteal nerves, under microscopic examination, showed an extreme degree of neuritis, there being an enormous increase of fibrous tissue, with in many parts of the section almost complete disappearance of the nervous elements.

CASE 3.—M. O—, æt. 37, August, 1895. Family history contains nothing of importance.

*Previous history.*—Patient has always been a healthy woman. Her habits are and always have been most abstemious. Present illness commenced a fortnight after her first confinement four months ago. The course of the pregnancy was quite uneventful, and patient was able to keep about in her usual health almost to the last. As to the labour, patient can give little information except that



she had a bad time and was laid up for a month. No instruments were used, and no definite complications except the one under discussion seem to have occurred. A fortnight after her delivery patient noticed a numbness and tingling of the ring and little fingers of the right hand. The left was similarly affected, but to a less degree. The left hand has recovered, but the right remains both weak and numb. In every other respect the patient has been quite well.

On examination patient is a fairly healthy-looking woman of spare build. The right hand is held in the *main en griffe* position. There is very marked muscular atrophy, affecting all the intrinsic muscles of the hand which are supplied by the ulnar. The wasting is most obvious in the interossei, and of these in the abductor indicis and in the muscles of the hypothenar eminence. The outer half of the thenar eminence seems unaffected, and so the loss of its ulnar constituents attracts less notice. In spite of the extreme wasting none of the muscles are completely paralysed, but their voluntary power is very slight. Neither skin nor nails show any trophic changes, and there is no cyanosis of the limb. Electrical examination shows in the ulnar muscles of the right hand loss of faradic irritability, with slightly increased irritability to the galvanic current. The contraction is very sluggish, and ACC. occurs before KCC. The reactions on the left side are normal.

*Sensation.*—No change can be detected, though patient still insists on the feeling of numbness. There is no tenderness of muscles or nerves. The knee-jerks are present. No affection of lower extremities or of cranial or other nerves can be made out.

Treatment with the galvanic current was at once commenced, and under its influence improvement soon became manifest. In the course of a few weeks signs of faradic irritability reappeared, and within the space of four months recovery was practically complete. Within six months all indications of disease had vanished. The condition must have reached its maximum before the patient came under observation, but even so the rapidity with which recovery occurred was quite remarkable.

## Cases of Localised Polyneuritis—Tabular Summary.

No.	Author.	Age of patient.	Number of confinement.	Period of onset.		Complicating factors.	Result.	Summary of symptoms.
				Ante-partum.	Post-partum.			
1	Johansen (40)	19	2nd	5th month	—	—	Recovery partial	Pain in right foot, quickly followed by pain in left. In 3 days almost complete paralysis of right lower limb, and soon after marked paresis in left. All the affected nerves and muscles very tender. Muscles wasted rapidly. Knee-jerks absent. No loss of sensation. Six months later right lower limb still completely paralysed.
2	Möbius (10)	38	—	—	? days	—	No improvement	Began with severe pain in hands, followed in 10 days by wasting of thumb muscles. Both median nerves tender on pressure.
3	" (10)	22	—	—	3 days	—	Improved	Began with tearing pain in right arm, followed by wasting with partial reaction of degeneration in ulnar muscles of right arm and hand. No tenderness.
4	" (10)	25	—	—	? wks.	Local peritonitis	Cured in 3 months	Ascribed to laying arm on cold compress. Paralysis of long flexors of fingers (right) with numbness of finger tips.
5	" (10)	32	—	—	? days	—	—	Commenced with numbness, followed by pain in right ulnar area. On examination, anæsthesia of right ulnar area, paresis of ulnar muscles, no electrical change. Ulnar nerve at elbow very tender.
6	" (10)	25	—	—	—	—	—	Pains in two ulnar fingers of right hand after delivery. On examination, slight paresis of right ulnar and median nerves.
7	" (10)	30	—	—	1 week	—	No change in 3 months	Severe pains in right shoulder and inability to raise the arm one week after delivery. Ten weeks later atrophic paralysis with complete reaction of degeneration in deltoid, supra- and infra-spinatus muscles. Paresis of triceps and anæsthesia in area of circumflex nerve.
8	" (15)	22	—	—	? days	—	Recovery in few weeks	Began with tearing pains in right arm. Condition 9 weeks later: diffuse paresis of right arm and great tenderness on pressure of brachial plexus.

	Date	Name	Age	Time	Month	Condition	Improvement	Notes
10	" (17)	29	6th	—	3 weeks	Pelvic inflammation	No improvement	At onset pain in left hand, then in both, followed by weakness and wasting of interossei. Three months later weakness of legs and tenderness of calves, but no actual paralysis or wasting. Knee-jerks present. No affection of sensation. After delivery 3 weeks in bed with pelvic inflammation; two days later pain in left calf and inability to extend the leg. Recovery in 3 weeks. After that again pain and weakness in the right shoulder, extending to the forearm and specially to the thumb. On examination, paralysis with complete reaction of degeneration of flexor longus pollicis.
11	" (17)	42	6th	—	2 weeks	? Peritonitis	Partial recovery	Began with hyperæsthesia of ulnar border of left hand, with shooting pain in arm and marked weakness of hand. Thirteen years later wasting of thenar and hypothenar muscles of left hand. Commenced with trophic lesions (vesicles) on the fingers; these were followed by wasting and paralysis of interossei, thenar muscles, and flexor indicis. Sensation not affected.
12	Tullant (12)	22	—	—	8 days	Difficult labour	Partial recovery	Commenced with painless paralysis of both anterior tibial and peroneal groups. On examination, 6 months later, there was complete paralysis with extreme atrophy of all these muscles, with the usual contracture; also paresis and slight wasting of both quadriceps. Complete reaction of degeneration in leg muscles, partial in the quadriceps extensor. Partial anaesthesia of both lower extremities. Trophic changes in skin and nails.
13	" (12)	31	6th	—	4 days	Long labour	Partial recovery	Sudden onset with intense pains, localised specially in the legs. During the 3 weeks that these symptoms lasted the muscles of both lower extremities wasted rapidly. On examination, 2 months later, there was great wasting of the muscles of the front of the thigh and of the antero-external group of the legs. The condition was most advanced in the anterior tibial and peroneal groups of the left leg. There were contractures at both hip, knee, and ankle. Sensation unaffected. Paradic contractility lost in the affected muscles of the left leg, preserved elsewhere. Trophic lesions of skin.
14	" (12)	36	5th	—	8 days	—	Partial recovery	

No.	Author.	Age of patient.	Number of confinement.	Period of onset.		Complicating factors.	Result.	Summary of symptoms.
				Ante-partum.	Post-partum.			
15	Bernhardt (41)	29	3rd	—	—	—	—	Commenced with pain in right shoulder, followed by progressive wasting of right hand, especially in interosseous spaces and ball of thumb. Marked weakness of the wasted muscles. Partial anæsthesia of ulnar area.
16	" (41)	31	2nd	—	?	Puerperal fever	No improvement	After confinement lay 4 months ill with fever. Pains from right shoulder down posterior and inner side of upper arm and ulnar region of forearm. First seen 9 months later, when there was partial anæsthesia of ulnar region both in arm and hand. Wasting of forearm, thenar muscles, and interossei, with <i>main en griffe</i> . Reaction of degeneration in both radial and ulnar muscles. (Doubtful case, possibly septicæmic.)
17	Mader (24)	25	3rd	—	1 month	Hyper-gravid	Death in 3 months; phthisis	Abortion produced at fourth month on account of hyperemesis; one month before this there was loss of control over sphincters. Seven weeks later an extreme degree of polyneuritis was discovered, universal in the lower limbs, and affecting also the muscles of back and abdomen. Great wasting with extreme tenderness of affected muscles. There was also incomplete anæsthesia in the paralysed limbs. P.M.—Extreme degenerative changes in the nerves; cord and nerve-roots normal. Death from phthisis.
18	Higier (42)	26	1st	—	1 week	Abortion 6th month	—	For the past 15 years (following typhoid fever) patient had been suffering from ingravescent bulbar palsy of pure motor distribution, the main symptoms being ophthalmoplegia externa, double facial palsy, and paresis of the muscles of phonation, mastication, and deglutition. Present illness commenced one week after abortion with great pain in both lower limbs, and muscular tenderness both superficial and deep. There was general loss of muscular power in both lower extremities, which amounted to absolute paralysis in both peronei. Knee-jerks absent. Sensation much blunted.



19	Köster (43)	25	—	—	14 days	—	—	No improve- ment	
20	Eulenburg (7)	28	1st	—	10th day	Tedious labour	Recovery in 3 months		Began with pain in left shoulder, which in a few days involved the whole arm, accompanied by increasing muscular weakness. One month later there was marked wasting in and paresis of the left deltoid, biceps, and brachialis anticus. The musculo-spiral, circumflex, and musculo-cutaneous nerves were very tender, and the skin over the deltoid hyperæsthetic. Five months later there was no improvement; the above muscles were still atrophic, and showed complete reaction of degeneration.
21	Turney	—	—	—	—	—	—		Commenced with pain all over the left arm, which lasted some days, and was succeeded by paralysis and rapid wasting of all the intrinsic muscles of the hand. Both median and ulnar nerves were tender along their whole course. Sensation was otherwise but slightly affected.
22	"	—	—	—	—	—	—		<i>Vide supra.</i>
23	"	—	—	—	—	—	—		<i>Vide supra.</i>

*Ætiology.*

The theory of auto-intoxication which is now accepted as an explanation of the occurrence of neuritis during pregnancy is no new thing. In Möbius's original communication that view was advocated, if only on purely theoretical considerations. Since then, however, Bouchard's illuminating book has been published, and has been the source of inspiration for an enormous amount of experimental work performed on similar lines, mostly by French observers. As a result of this, though a mass of evidence has been accumulated which has converted an hypothesis into a certainty, still we seem to be as far as ever from being able to identify the toxic agents in question. Our standpoint remains the same as that taken by Möbius in 1887; that is to say, its elevation is no greater,—though, on the other hand, the stability of the position is immeasurably increased.

Before proceeding to a closer consideration of this theory of auto-intoxication, it may be well to refer to some divergent suggestions which have been offered to explain the ætiology of puerperal and specially of pregnancy neuritis. Its production by reflex action may be summarily dismissed, for in this, as in other forms of "reflex paralysis," too much is now known both of morbid anatomy and pathology to allow such a phantom explanation to pass muster for a day.

Tuillant, noticing the frequency with which puerperal neuritis is preceded by severe vomiting during pregnancy, suggested (though without altogether rejecting the auto-intoxication theory) that the neuritis was the result of the vomiting. This view has since been adapted in several quarters in a more or less modified form. Mader, for example, while acknowledging the existence of auto-intoxication during pregnancy, lays down a law that for the development of neuritis some exciting cause is required in addition, this being found in either excessive vomiting or delivery with its various complications. He asserts that no case of neuritis during pregnancy has been recorded in which one or other of these exciting causes could be excluded. Since then Johansen (40) has recorded one case in which

neuritis developed during a perfectly uneventful pregnancy, and the present writer is now adding another.

The connection between hyperemesis and neuritis is undoubtedly very close. It was present in six out of eight cases of neuritis developing before delivery, and in nine out of thirty-seven if we include both ante-partum and post-partum forms. But the assertion of its being a necessary antecedent even of ante-partum neuritis must be abandoned. The more consistent view is that both symptoms are alike manifestations of the same toxic condition. Vomiting in itself, however excessive, is not found, when it occurs in other relationships, to be a cause of neuritis; even in its extreme form it is not a very rare symptom, and had such a causal nexus any real existence it would ere now be fully recognised. Lindemann's autopsy on the case reported by Solowieff is strongly confirmatory of the view that auto-intoxication is the common cause of both hyperemesis and neuritis. He describes extreme degenerative changes in the kidneys, and to a less extent in the liver, which are quite characteristic of intoxication. To refute the argument that the cachexia set up by the vomiting was the cause of the neuritis, he undertook a series of observations on dogs, the results of which show clearly that malnutrition alone, however extreme, is unable to account for the degenerative changes found in the nerves. From every point of view, then, excessive vomiting must be rejected as the cause of the polyneuritis of pregnancy. No other possible cause having been suggested save the fact of pregnancy itself, we may now deal with that fact in its pathological relations.

It is largely to the work of Bouchard that we owe a clear appreciation of the fact that the life of the organism entails the constant manufacture of toxic products which, if that life is to continue, must be as constantly removed from the body. The main path of exit is by the urinary excretion, the degree of toxicity of which, therefore, should, other things being equal, form an index of the metabolic activity of the body. Thus it was found that the urine after severe muscular exertion was more toxic than that secreted after rest; that the urine of the day had a different toxicity from that of the night.

If, however, the renal function was impaired the toxicity of the urine was remarkably diminished.

The corollary of this, the fact that the increased toxicity of the serum corresponds to a diminished toxicity of the urine, was furnished by Tarnier and Chambrelent (45) and others. And now to the application of these facts. It was early observed by Naumann and Charpentier (46) that the toxicity of the urine is largely increased in pregnancy, and that in certain cases the toxicity of both urine and serum may be augmented, this proving an absolutely increased formation of toxines. In eclamptic states the toxicity of the urine falls and the toxicity of the serum rises. Unfortunately no estimation of the actual serum and urine toxicity in a case of puerperal neuritis has yet been made.

As to the exact nature of these poisonous products which are constantly being evolved, we are still to a great extent in the dark. Bouchard proved that neither urea, uric acid, nor creatin was the active agent, though, as regards creatin, he has lately been contradicted by Duhrssen (47). The substances to which the toxic qualities should be attributed are, in Bouchard's opinion, the potassium salts and certain organic bases associated with the urinary pigment. These latter he failed further to isolate. Subsequent observers have largely added to our knowledge of the details regarding toxicity, but all that we can say with certainty is that more than one substance is concerned, and that it is a product of either anabolic or katabolic metabolism of proteid matter. It is this unknown substance (or substances) circulating in the blood that constitutes the toxæmia of pregnancy that is concerned in the production of uræmia or eclampsia, and that threatens us whenever from any cause either our metabolic processes get ahead of our excretory powers, or our excretory powers lag behind our metabolic processes.

The frequent occurrence of albuminuria has been recently dealt with from this point of view by Prof. Clifford Allbutt (48), and therefore requires but little comment from us. That, as he maintains, no theory of mechanical pressure either on the kidney or its vessels will account for this symptom there can be no doubt. To those who have accustomed



themselves to regard it as the result of toxic influences, the idea that it is due simply to mechanical causes comes almost with the shock of surprise.

Renal disease in the forms in which it occurs in connection with pregnancy is *par excellence* a blood disease. In the early degenerative change described, for example, by Lindemann, as also in the later condition of cirrhosis, we see equally plainly the effects of toxins clamouring, so to speak, for excretion. It is noteworthy, too, that gross degenerative change may be present and yet the urine may remain free from albumen.

Eclampsia may occur either with renal disease or without; it is impossible, therefore, to look upon it, as is so often done, simply as the result of renal disease; both alike must be regarded as common effects of the same poison. The significant condition of the serum and urine has already been described, and this renders further proof of the associated toxæmia unnecessary.

To the symptom of vomiting reference has already been made. In its severer forms it is undoubtedly toxic in origin: as regards its milder manifestations it is impossible to speak with an equal degree of certainty, but the pathological anatomy of normal pregnancy (if such a paradox may be admitted) gives some justification for supposing that both have a common source in the altered condition of the blood. At all events these varying degrees of severity shade imperceptibly into each other, and any attempt at differentiation beyond that must be purely artificial. In this relation the conclusions reached by Lomer and Frerichs (quoted by Davis, 49) are of remarkable interest. They sum up their discussion of the connection between the vomiting of pregnancy and acute yellow atrophy of liver in the following words: "This disorder may affect pregnant women in forms of varying severity, and the milder cases of acute yellow atrophy of the liver, in which death does not occur from this complication, often show themselves through nausea and vomiting only."

Acute yellow atrophy of liver, a disease so intimately associated with the pathology of pregnancy, is now acknowledged to be the result of a very severe form of

poisoning, probably introduced to the system by the portal circulation. Whether the poison is, as Hunter suggests, of bacterial origin and absorbed from the alimentary canal we do not know, but we have to take that possibility into consideration before claiming acute yellow atrophy as an example of auto-intoxication. The pathogenic organism is still hypothetical, and till it is found we are justified in looking upon the morbid product as the result of some perversion of natural processes. The degeneration of liver cells which is found almost normally in the bodies of pregnant women, and which has hitherto been ascribed to anæmia, is almost certainly produced by toxic influences which are probably of the same nature as, but of less intensity than, those which are responsible for acute yellow atrophy. Bouchard has taught us that one of the most important, if not the most important hepatic function, is the arrest and neutralisation of toxins arriving by the portal circulation. As with the kidneys, so with the liver: if the noxious bodies to be excreted arrive in overwhelming quantity, the excretory epithelium breaks down, and the process of elimination may be altogether arrested with its usual disastrous effects upon the rest of the organism. A partial breakdown in these excretory processes may react mainly or entirely on the nervous system, the highest centres suffering more commonly than any others. The psychoses of the puerperal period have been already recognised as to a large extent of toxic origin; their connection with puerperal exogenous infections is too close to be ignored. But the principle of auto-infection as explaining the development of mental symptoms either during pregnancy or after a perfectly normal delivery has not been so readily conceded, though it has long been advocated by Möbius, Mader, and others. If we accept that view as regards the affections of the rest of the nervous system we can hardly reject it for the brain. Among the thirteen cases of universal polyn neuritis here recorded, mental symptoms, from acute mania downwards, were present in six.

We see, then, that as with other poisons, so with this, the higher centres as well as the lower may be attacked. It is more difficult, perhaps, to maintain the same position with

regard to the minor psychoses—the irritability, the neuralgic tendencies, the unnatural cravings, and so forth—of pregnancy; but if we argue from the greater to the less, from the better known to the less known, we shall not go far wrong. According to the semi-metaphysical pathology as regards nerve-cells which still prevails to some extent, the psychoses of pregnancy spring into existence on the basis of an abnormal irritability of the nervous centres. That this irritability does exist is an undeniable fact, but it should be regarded as an effect, not a cause; and when in every direction evidence is found which points irresistibly to the presence of toxic agents in the blood, whose influence upon the peripheral nerves and upon the cortical cells can hardly be gainsaid, it is not rash to conclude that this same cause is at work, even if the symptoms be trivial instead of severe. And this view may be held without forgetting that the constitution of the nerve-cells themselves must count for something; obviously if their power of resistance is diminished, a slighter toxic action will produce a greater effect.

Nothing need now be said on the subject of polyneuritis, but the optic nerves stand on so different a plane from the rest of the peripheral system, and their liability to toxic influences is so characteristic, that evidence of their affection in pregnancy must materially strengthen the case for toxæmia. Such an instance has been recorded under the heading “A case of recurring reflex amblyopia due to pregnancy” (50).

The patient, æt. 40, was first seen on April 11th, 1892, when she was four months pregnant. Eight and a half years before, during a pregnancy, she had noticed a dimness towards her left side, but did not discover that her left eye was blind till a month after her confinement, when she got something into her other eye. She had had four children since then, and had noticed nothing wrong with the sight of the right eye. On examination the left eye diverged; there was no perception of light, and the optic disc was atrophied. The right eye was normal, save for 3 D. of hypermetropia.  $V. = \frac{5}{10}$ . From that time forward the sight rapidly grew worse, though still without any change in the disc or fundus.

Premature labour was induced on June 29th, at which time the patient could not see her fingers when held up before her face. Immediately after her recovery from the confinement improvement set in, and in October V. =  $\frac{5}{8}$ . In January, 1893, V. =  $\frac{6}{6}$ . The appearance of the disc was that of partial atrophy. The patient was seen again on January 29th, 1894, when she was found to be three weeks pregnant. In the course of the next month sight became rapidly worse, and on March 8th abortion was procured. The recovery in sight commenced at once.

Although this is reported as a case of reflex amblyopia, it appears to admit of a much simpler explanation,—that it is an example of retro-bulbar neuritis of toxic origin. Partial atrophy as a result of reflex amblyopia is difficult to imagine, but so soon as the toxic element is recognised, all improbability disappears. As we have already seen when speaking of polyneuritis, the idea of reflex paralysis dies hard. Its sphere, it is true, becomes yearly more limited, but unfortunately it has not yet been relegated to the limbo of medical superstitions.

Myelitis has been occasionally observed both during pregnancy and the puerperal period. Mills records one case which commenced at the time of, or immediately after, the patient's first confinement. This attack left her permanently paraplegic, and four years later she was still further disabled by what appeared to be bulbar myelitis. A remarkable case of Handford's, of which a summary has already been given, seems most probably to be a combination of peripheral neuritis and polio-myelitis, or rather inferior polio-encephalitis.

Anterior polio-myelitis pure and simple has, so far as the writer is aware, never been observed in connection with gestation. The following is a brief account of such a case which is at present under his charge.

The patient, æt. 33, enjoys perfect health apart from the local trouble. Her last confinement occurred two and a half years ago, and was normal in every way, save that instruments were used. Towards the end of the month, at a time when her general health was almost restored, she noticed that she often dropped things, owing to weakness of



her hands, and this loss of power had since then steadily increased. When first seen, a year after the onset of the symptoms, the condition was described as follows :—"There is great weakness of the posterior interosseous group in both forearms, with a moderate amount of wasting. On the right side the supinator longus acts well, on the left it is much wasted, and almost functionless. There appears also to be some wasting of the intrinsic muscles of the left hand, but all their movements are performed well. Electrical examination shows marked loss of irritability to the faradic current in the long extensors of the wrist and fingers. To the battery there is increased irritability with typically sluggish contraction, and ACC. is greater than KCC. Sensation is quite unaffected; in fact, from the first there has been a complete absence of sensory symptoms of every kind. Both alcohol and lead can be positively excluded. It will not escape notice how striking a similarity there is between the symptoms in this case and those produced by the toxic agency of lead. This observation rounds off the possibilities of auto-intoxication with regard to the nervous system in as complete a manner as can be desired. The cortical centres in the brain, the motor nuclei in the pons, the corresponding nuclei in the cord, the purely sensory tract of the optic nerves, the nerves of the medulla, and finally those of the extremities,—all in turn suffer from the effects of the poison.

There remain still to be mentioned certain bypaths of toxic action, our knowledge of which is recent and scanty. Tetany, the toxic origin of which is becoming daily more fully established, has been, from the time of its discovery, associated with the event of gestation, but the nature of the connection is only now becoming clear.

Osteomalacia, of which we still know so little, will, in all probability, in the future be ranked among the results of toxic action, and its connection with child-bearing is already assured.

Chorea may be cited as another example; but here, too, the ground is hardly firm enough for more than an allusion. The enlargement of the thyroid which occurs in pregnancy has been adduced by Mader as another proof of the toxicity

of that period, and the suggestion may possibly some day be verified, but the time certainly has not come yet.

Enough has now been said to indicate the teeming possibilities of the theory of toxæmia in pregnancy. It remains now to discuss the possible variations produced by the event of childbirth; to ask what fresh factors have to be considered in regard to the affections—the neuritis in particular—which occur during the puerperium. These possibilities have to be sought in several directions. The first to be taken into account is the effect upon the nervous system of the pain, the muscular exertion, and the fatigue inseparable from parturition—influences, however, which it is impossible to estimate with any approach to accuracy. By themselves it is inconceivable that they could do more than act or help to act as an exciting cause of peripheral neuritis. The painful exertions of parturition, severe though they may be, can be paralleled to some extent under other circumstances, and no facts exist which can justify us in accrediting them with any considerable share in the production of disease of peripheral nerves.

An objection has been raised to the toxæmic origin of neuritis affecting the lower limbs only; that even in normal labour the chances of injury to the lumbo-sacral nerves are such, that it is impossible to exclude a local origin. If this local factor had any considerable share in the production of the lesions, we should find that in comparing the neuritis of pregnancy with that of the puerperal period, the lower limbs tended to be affected in the latter to a disproportionate extent.

But this is certainly not the case; out of twenty-nine instances of puerperal neuritis there were twenty-two in which the disease was limited to either the upper or lower limbs, and in only five of these were the lower limbs affected. Of eight cases of pregnancy neuritis, on the other hand, six were of universal distribution, and in the remaining two the lower limbs only were involved. These figures are certainly not suggestive of any special liability of the lower extremities during the puerperal period. Even where the labour was difficult no evidence of such a tendency can be detected, for in two out of the three

cases in which labour was instrumental or prolonged, the upper extremities only were involved. There is no reason to suppose, therefore, that the mechanical effects of parturition on the lumbo-sacral nerves have any material influence on the production or even the localisation of symptoms.

The last difficulty that remains to be considered is the possibility that the infection may come from without and not from within, that the toxins are bacterial in origin rather than metabolic. This, however, has already been met by the exclusion of all cases from consideration where any indications of prolonged sepsis were present. If these cases be shut out there is not the shadow of ground for supposing that pathogenic bacteria or their products gain access to the circulation or can exercise any influence whatever.

But granting that in both cases alike, in both the neuritis of pregnancy and that of the puerperal period, the root of the symptoms is to be found in auto-intoxication, it does not necessarily follow that the morbid material is precisely the same. There is, indeed, a possibility that it is not. In considering the evidence of intoxication during pregnancy, the prominence of gastro-intestinal symptoms can hardly escape notice. The tendency of the liver to disease, varying from slight fatty degeneration of the epithelium to absolute destruction in acute yellow atrophy, is equally striking, and, as has been already suggested, is no doubt the result of poisonous substances reaching it from the alimentary tract. At the same time the largely increased consumption of food necessary for the generative process implies an equally large increase of the toxic material normally present in the alimentary canal. Taking these facts together, there seems a fair *primâ facie* case for believing the alimentary canal to be the chief birthplace of these toxic substances, which, overcoming the neutralising powers of the liver, pass thence into the circulation. During the puerperal period, on the other hand, in place of the large ingesta and active constructive processes of pregnancy we find a vigorous retrograde metabolism. The rapid involution of the uterus, and to a certain extent of other organs,

must throw into the channels of absorption quantities of material which have now become unnecessary and so effete. It is possible that this irruption of toxic matter into the lymphatics and so into the general circulation, may in its turn produce, or at all events increase, the morbid state of the blood to which the development of degenerative changes in nervous and other tissues is due. It is improbable, however, that this suggested source of circulating toxins is of any great or independent significance, for otherwise the symptoms of a pre-existing neuritis would certainly be at least temporarily exacerbated by delivery, instead of being, as is actually the case, almost immediately relieved. Our position, therefore, that in puerperal as in pregnancy neuritis the main factor, the *causa causans*, is the same, remains unaffected in spite of these suggested differences in detail. The various conditions of parturition and of the puerperal period may in one of these ways or another help to precipitate the outbreak of the symptoms which had been hitherto latent, but they can do no more; apart from the conditions produced by pregnancy, they are inoperative.

Before closing this discussion a few words may be devoted to a possible element in the production of peripheral nerve disease which has hitherto in these pages been ignored. In affections both of the brain and spinal cord the powers of resistance of the nervous tissue are rightly considered to play a leading part. An estimation of those powers of resistance is carefully made, based upon the various facts elicited as to heredity and personal liability to nervous disease. The peripheral nerves, however, are only grudgingly allowed to share in the solidarity granted to the rest of the nervous system. In many of the clinical records on which this paper is based, all mention of nervous antecedents is most disappointingly avoided, and this omission renders impossible a full recognition of what might be a factor of some importance. But even so the facts are sufficiently suggestive. In eight out of the thirty-six cases there is a definite history of either personal or hereditary tendency to nervous disease. The neurotic diathesis, then, so far as these scanty data can be trusted, may be regarded as a predis-



posing cause in the production of peripheral neuritis, as of other affections of the nervous system.

### *Diagnosis.*

The diagnosis of this special form of polyneuritis must depend, on the one hand, on a knowledge of the causal relation which exists between the process of gestation and inflammation of peripheral nerves, and, on the other, on a rigid exclusion of other morbid agencies. Of the two, the latter condition is the more difficult to fulfil; excess in alcohol, the most wide-spread of all causes of peripheral neuritis, must in the female sex too commonly remain a matter of conjecture to justify any certain verdict in a proportion of the cases. Not infrequently the two factors seem to co-operate, and the result may be attributed to one or the other, according to the predilections of the observer.

Unfortunately puerperal neuritis has no "stigmata" such as those which make the recognition of post-diphtheritic paralysis so easy; *quâ* symptoms it is quite indistinguishable from the alcoholic variety.

### *Prognosis.*

As in other forms of polyneuritis, the direct danger to life is slight; only one death among the thirty-six cases occurred as a result of paralysis. Three, however, succumbed to what appears to have been a secondary tubercular infection, which in every case pursued a very rapid course.

Where recovery occurred, it was in the large majority of cases complete, though not infrequently two or more years elapsed before the disappearance of the last symptom. With few exceptions the residual paralysis was localised in the anterior tibial and peroneal groups of muscles, which throughout showed a special vulnerability. It is, it must be owned, by no means certain that where this permanent disability remained it was not a pseudo-paralysis due to shortening of tendons, rather than a failure of the neuro-

muscular system ; and if so, the prognosis as to recovery of nerves must be considered almost absolutely good.

In but a very small proportion of the cases was any tendency manifested for a repetition of the symptoms in successive confinements, nor were primiparæ affected in undue proportion.

### *Treatment.*

As it is impossible, with our present resources, to foretell the onset of neuritis, no prophylactic treatment can be suggested. But in view of the close association between the excessive vomiting of pregnancy and the affection of nerves, the occurrence of one could always indicate the possibility of the other, and should, moreover, lead to an examination of the excretory functions which may be at fault. Unfortunately, examination of the urine merely for albumen will be followed in most cases by a negative result ; albuminuria is only exceptionally present even in the fully developed disease. Failure of the excretory function may, however, be conveniently estimated in terms of urea, even though urea is not in itself a noxious body. The direct method of solving the problem by a determination of the toxicity of both urine and serum is, for the present at all events, impracticable for clinical purposes. Should the existence of toxæmia, in spite of these difficulties, be definitely ascertained, an attempt might be made to supplement the deficiency of excretion by the time-honoured methods adopted in renal disease.

If the paralytic symptoms become dangerous to life, the question of inducing premature labour must be considered, and in one of the cases recorded above that procedure actually became necessary ; in another there is some reason to believe that a similar form of treatment might have saved the patient's life.

Symptomatic treatment must be conducted in accordance with the principles recognised in dealing with other forms of the disease. The pain and tenderness which constitute so prominent a part of the symptoms in the early stage are an effectual bar to any vigorous measures at that period ; and theoretical considerations as well make it evident that little benefit is likely to result from stimulation applied while the mischief is

still ingravescant. The irritative stage once over, electricity with massage as an adjunct is recognised as the most powerful agent at our disposal for initiating the processes of repair. While the nerves are still functionless, it should be used in the form of the galvanic current; later on the faradic current should be substituted, and its use continued until recovery is complete. Care should be taken from the first to avoid as far as possible the establishment of contractures, which bring with them more danger of permanent disablement than the neuritis itself. These contractures are due partly to the position of extreme flexion adopted by the patient to relieve tension on painful structures, and partly to the dropping of the feet resulting from the paralysis of the anterior tibial and peroneal groups of muscles. Much may certainly be done to prevent the latter by means of appropriate support; but with the former, when the sensory symptoms are severe, little can be done or even attempted until it is too late. Both time and patience will then be necessary, but even at this stage prolonged massage and, in the last resort, a division of tendons will restore to the crippled limbs a fair measure of usefulness.

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# ON COMPULSORY VACCINATION.

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Six and twenty years ago vaccination was for the first time made compulsory, in fact, in England. Previous to that time it had indeed been obligatory in name, but no efficient means were given to the local authorities for putting the recommendations of Parliament into practice. Those who designed these Vaccination Acts, and those who carried them through Parliament, did so in the belief that there was adequate evidence to show that vaccination was a protection against smallpox, and that there was no ground for believing that the injury which might possibly be inflicted on the individual was out of proportion to the good which would be gained by the community at large.

We have been recently and still are engaged in a great controversy, the avowed object of which is to test whether the opinion formed by those who passed the compulsory clauses of the Vaccination Acts was well founded ; whether the passing of the Acts was justified at the time, and whether they should be permitted any longer to remain in force. At the time when these Acts were passed, June 1871, a great pandemic wave of smallpox was passing over Europe, and in some localities the mortality was frightful.<sup>1</sup> At Leipzig, in the previous nineteen years,—1851 to 1870,—there

<sup>1</sup> Sir Lyon Playfair, in House of Commons, June 19th, 1893.

had been only twenty-nine deaths from smallpox, and this immunity was pointed to with triumph by those who were opposed to vaccination. In 1871, out of a population of 107,000, no less than 1027 persons died of the disease. Amongst 23,892 children under fifteen years of age, 715 perished. This mortality is no less than 3 per cent., or 30,000 per million.

When such catastrophes have passed out of memory, the world little notes the lessons which they teach, and each successive generation has to gain experience for itself. This experience is sometimes gained at a sad cost of human suffering and death, much of which might often have been prevented. It is now said that the evidence on which these compulsory Acts were successively passed was erroneous, that vaccination is powerless to stay the course of an epidemic of smallpox, that it neither lessens the chance of attack nor diminishes the risk of death; but on the contrary, that it brings in its train a multitude of evils, which are substantial and real, whilst the supposed benefits are illusory and vain.

Vaccination has at all times been severely criticised, but never more keenly or unsparingly than at present, and lately it has been subjected to an inquiry more searching probably than has befallen any other branch of medical practice, and it has not been found wanting. The members of the Royal Commission on Vaccination by a majority of eleven to two have in their final Report given as their deliberate conclusions from the evidence before them :

(i) That vaccination diminishes liability to attack by smallpox.

(ii) That when attack does occur in vaccinated individuals, their vaccination renders the disease milder and less fatal.

(iii) That protection against attack is greatest during the years immediately following vaccination, and that the period of highest protection may perhaps be fairly stated as covering nine or ten years.

(iv) That after the period of highest protective potency, the efficacy of vaccination against attack is considerable in the next quinquennium, and possibly never altogether ceases, but that it rapidly diminishes.

(v) That the power of vaccination to modify attack outlasts



its power to protect against attack, and that its efficacy in this respect is still very considerable, even during the later periods of life.

(vi) That re-vaccination restores protection, but that this restored protection again diminishes, and should be renewed if it be desired to ensure the highest degree of protection which vaccination can give.

(vii) That vaccination is beneficial according to the thoroughness with which it is performed.

It is my wish to consider, firstly, the arguments on which the opponents of vaccination rely to prove that the conclusions arrived at by the Commission are erroneous,—that vaccination in any form is useless, and that compulsory vaccination is not justifiable from any point of view—medical, moral, or political; and, secondly, the grounds on which these arguments may be met.

It is well to study these arguments, for the more clearly we understand their nature, the less difficult will be the task of appreciating the many fallacies with which the whole question is beset; not only so, a careful consideration of the criticisms—not always kindly—which have been so freely lavished on vaccination and on the medical profession, may be productive of good, if it lead to the recognition and amendment of existing defects in the vaccination system, and in the administration of the vaccination law as it now stands. *Fas est et ab hoste doceri.* Much may be learned in endeavouring to find out the truth.

It is deeply to be regretted that so much personal feeling has been introduced into the discussion, for it must be remembered that an advocate is but a poor judge, and that a scientific question such as this ought to be considered and judged purely on its merits. It is not a matter of belief, but of hard uncompromising fact. Vaccination is not an infallible panacea, it is not an absolutely certain protection against smallpox, but facts none the less warrant the belief that its effect in modifying the disease is great; and to make a statement which does not stand investigation does more harm than exaggerated praise can hope to do good.

*Objections made to Compulsory Vaccination.*

I. Compulsory vaccination has been objected to on the following grounds—

(i) *Personal*.—That it overrules parental responsibility ; and disregards parental feeling.

(ii) *Political*.—That it is an unwarrantable interference with the liberty of the subject.

(iii) *Moral*.—That it is immoral to inoculate a healthy infant with disease.

It is necessary for a few moments to consider each of these propositions in detail.

(i) Where it can be shown that it is for the good of the community that limitations should be placed on parental responsibility, the law has decided that it is expedient that such limitations should be made. In barbarous and uncivilised communities parents have absolute and despotic power over their offspring, to do for them well or ill as may seem good to them ; in a civilised community this is not so, the law of the land will not permit parents to starve, neglect, or to ill-treat their children, and up to a certain point it compels every parent to accept the responsibilities which they have assumed in begetting them. It compels parents to treat their children with reasonable care, or failing this renders them liable to punishment ; it insists that all children shall receive a certain minimum of education ; it will not permit the employment of children of tender age in workshops or manufactories, to the pecuniary advantage of their parents. In a word, at frequent stages in their career from infancy to adolescence, the law places well-defined limitations on parental responsibility, using compulsion in one direction, and restraint in another, so as to ensure that as far as may be possible children shall be guarded from the evil which may result from ignorant, indifferent, or unnatural parents. Thus parental responsibility in a civilised community is assumed to exist for the benefit of the children, and where it interferes with their well-being the law asserts, and rightly asserts, the power of stepping in and compelling the parents to act in a way which experience shows is most to their advantage.

Another objection to compulsory vaccination closely allied to the foregoing, is that it disregards parental feeling. This is an appeal to sentiment and not to reason, and is an argument at first sight more difficult to answer, although not so in reality. No one knows better than a doctor how often parental feelings are at variance with what is obviously best for the child. We all of us reverence these feelings, and acknowledge that they should be tenderly dealt with, and treated with all forbearance; yet who of us has not pleaded in vain for a child whose life might be saved by some simple operation, which the parents will not permit as they cannot bear to have their little one "cut about." Parental feeling, like everything else, requires education. We have every day experience of the blind affection which leads parents to do things which are injurious, and greatly to the undoing of the child. It cannot be questioned that when parental feeling is exercised to the disadvantage both of the child and of the community it may be justly disregarded. The state has the right to require the parent to make some sacrifice for the common good. Even Mr. Picton would, I presume, be willing to admit this much, for he says ('Contemporary Review,' 1896, p. 497): "The detailed care of our health and the health of our children must surely be left to individual responsibility, unless in grave exceptional cases where our conduct may affect the whole of the community"—and this is all that any reasonable citizen would ask.

It is not possible for the state to concern itself with the maladies and particular methods of treatment of individuals, but it has the right to interfere when its citizens, from whatever cause, permit themselves or their children to become a source of disease or danger to the rest of the community. In this, as in many other questions regarding compulsory vaccination, the so-called "rights" of the *individual* are frequently put forward as though they were the main consideration. In an organised community this is an untenable position, and the justification of compulsory vaccination must be established by proving that it is beneficial to the community at large. The plea of parental feeling cannot therefore be upheld when the convenience of the individual is opposed to the welfare of the community.

(ii) Again, compulsory vaccination is said to be an unwarrantable interference with the liberty of the subject. That it is an interference with the liberty of the subject cannot be gainsaid ; but whether it is unwarrantable, depends upon the answer to the question which underlies the whole subject, namely, whether the good of the community requires this particular restraint to be put upon the individual.

It is certain that, in this country, under existing circumstances a man's liberty is restrained in various directions ; thus, if he constitutes himself a source of danger to himself or to his neighbours his liberty is interfered with, if he lays violent hands upon himself or his neighbour, if he poisons his water or his food, or if while suffering from an infectious disease he so exposes himself as to endanger the health of others. These instances sufficiently indicate the right which the state assumes to interfere with the actions of an individual, if by so interfering it can ensure that he will be restrained from some act which may be harmful to himself or to those about him. If therefore it can be shown that the vaccinated infant is less liable to contract smallpox, and therefore less liable to spread the disease, it must be conceded that the state has a right to require its parents, even at some personal inconvenience, to have it vaccinated.

(iii) It has been urged that it is immoral to inoculate a healthy infant with disease.

In this argument there is an obvious fallacy. It would be immoral and unjustifiable to inoculate a healthy infant with disease, were the object that of producing disease. No words of condemnation would be too strong for him who would wilfully inoculate a child with tubercle, syphilis, or smallpox ; and could it be proved from investigation of the facts that vaccination resulted only in harm to the infant and was not protective against more serious disease, the operator would stand self-condemned, and there would be no justification for delay in demanding a repeal of the Acts.

The morality or immorality of an act must depend in some degree upon the intention, and the circumstances under which it is performed. No one, for instance, would be prepared to uphold the morality of intoxication, but at the same time no one except a fanatic would condemn the production of in-



toxication (for such it is) by ether for the purpose of relieving a patient from the suffering of a painful operation. Thus again the answer to this objection must be sought in the reply to the fundamental question,—Is vaccination beneficial to the community by lessening the liability to attack from smallpox, or by mitigating the severity of the disease if acquired?

II. Not only has the practice of compulsory vaccination been condemned on personal, moral, and political grounds, but also on the ground that it is useless and dangerous.

The more important of these objections are as follows :

(i) *Theoretical*.—It is said that vaccinia and variola are totally distinct diseases, and that the inoculation of cow-pox does not, therefore, exercise any specific protective power against smallpox (Crookshank).

(ii) *Statistical*.—It is stated that so-called cow-pox is nothing else than human variola artificially transmitted, and that statistics of smallpox epidemics demonstrate the fact not only that vaccination does not protect against smallpox, but that it actually causes it (Vogt<sup>1</sup>).

(iii) *Practical*.—It is alleged that the injuries caused by vaccination are so numerous and so terrible, that there is no justification for the continuance of a practice which is productive of so much evil and powerless for good.<sup>2</sup>

This is not the place to discuss the first two propositions, which, if both were true, would be mutually destructive. If it can be shown that vaccination does afford protection against smallpox, the origin and nature of the virus are matters rather of pathological interest than of practical importance. It would certainly be unreasonable to refuse to use anything which could help us in the time of need, because its origin was not conclusively settled to our satisfaction. If this principle were carried to its logical, or rather illogical, conclusions we should have to discard our microscopes and

<sup>1</sup> Vogt, Prof. Adolf (Bern), ‘Memorial concerning the Effect of Vaccination, &c.,’ chap. ii, p. 4, “Identity of Variola Vaccina and Variola Vera;” chap. viii, p. 19, “Variola Epidemics produced by Vaccine Inoculation.” Paper forwarded to the Royal Commission on Vaccination (Appendix to Sixth Report of the Royal Commission on Vaccination,’ p. 689, *et seq.*).

<sup>2</sup> ‘Vaccination proved Useless and Dangerous.’ By Alfred R. Wallace. London, E. W. Allen, 1889, p. 38.

electric lights, because we were not fully satisfied as to the nature of light or electricity.

The third proposition, namely, that which relates to the extent and severity of vaccinal injuries, is one which deserves the most careful study. It is alleged that syphilis, tubercle, and other diseases, such as cancer and lupus, have been inoculated at the time of vaccination ; and that pyæmia, erysipelas, and various other inflammatory affections, result directly from the operation of vaccination as it is at present performed.

That harm occasionally results from vaccination in individual cases cannot be doubted ; but whether the number of cases in which injury is inflicted be large or small, it is interesting to note that the annual infantile death-rate has not increased since vaccination was made compulsory ; it has, in fact, diminished (see ' Final Report of the Royal Commission on Vaccination,' p. 102, par. 385). (The actual numbers are 1838-42, 152 per thousand births ; 1847-50, 154 ; 1851-60, 154 ; 1861-70, 154 ; 1871-80, 149 ; 1881-90, 142.)

It is obvious that these figures give no certain data for determining the actual number of deaths which result directly or indirectly from vaccination, neither does the diminution in the annual death-rate show that no deaths result from the operation ; they only indicate that no appreciable increase in the death-rate, due to vaccination, has occurred.

But there are other data available for forming a reasonably accurate estimate of the facts. The number of deaths or of serious injuries which result annually from vaccination may be arrived at with considerable certainty. From the Registrar-General's returns it appears that in the years 1881-89, the number of deaths certified as connected with vaccination was 476, or nearly fifty-three a year. During these nine years 6,739,902 primary vaccinations were performed. This gives an average of one death to 14,159 primary vaccinations.

From consideration of the cases investigated by the staff of the Local Government Board, and by the medical officers appointed by the Commission itself, I am of opinion that this number with due allowance for errors, represents approximately the average of serious accidental complications following the operation.

It is interesting to compare these numbers with the fatality

from smallpox (even in a mild epidemic), unfettered by vaccination. In Leicester during the outbreak of 1891-2, seven unvaccinated children, under one year of age, were attacked, of whom two died (= 28·5 per cent.), while ninety-three unvaccinated children between one and ten years of age were attacked, of whom ten died (= 10·7 per cent.); or taking both age periods together, 100 unvaccinated children were attacked, of whom twelve died. Thus in this unvaccinated community, with all the boasted safeguards of isolation and sanitation, as many children died from smallpox, as, according to the statistics given above, might be estimated would be likely to die or to suffer from serious injury amongst a like number of children (100) in 1680 years, or in about 169,908 vaccinations. During this same epidemic only two vaccinated children under ten years of age were attacked by smallpox, neither of whom died. Leicester in many ways has proved a veritable mine of information on points connected with vaccination—an object lesson, painful indeed, but one which has served a useful purpose to those who can read aright.

These facts show, as all will be willing to admit, that the case fatality from smallpox is vastly greater than that from vaccination,<sup>1</sup> yet it must be admitted that vaccination is not exempt from that liability to accident which exists in all human affairs. Operations even of a trivial kind sometimes prove fatal; and that most beneficent means of alleviating pain which has been universally adopted,—the administration of anæsthetics,—is not unattended by risk, and occasionally results in death. The percentage number of deaths which occur annually in England from chloroform is far greater than that which results from vaccination, it is, in fact, nearly seven times as great; and though the risk from ether is much less, the percentage number of deaths per annum traceable directly or indirectly to anæsthetics is appreciably greater than that which follows vaccination, while the total number is approximately the same.

<sup>1</sup> In adopting the practice of vaccination we can no longer take credit to ourselves for “great strength of mind,” as is recorded of Benjamin Jesty, of whom it is said on his tombstone that he was “particularly noted for having been the first person who introduced cow-pox by inoculation in the year 1774, and who from his great strength of mind made the experiment from the cow on his wife and two sons.”

It cannot be argued that the rare fatalities attendant upon vaccination are sufficient ground for rejecting the practice if it can be proved to be on the whole beneficial. If it is to be discredited, it must be by showing that the injury thereby inflicted on individuals is out of proportion to the good which is gained by the community ; not by exaggerating, distorting, and repeating every isolated instance of injury which occurs. Yet it may perhaps be asked, whether our profession has done all in its power to make vaccination popular, and to minimise the risk,—whether the lymph has always been collected, stored, and used in a manner wholly consistent with modern views of pathology and antiseptics ?

Disasters have followed vaccination, owing to the use of “vaccine lymph” from such sources as the “shirt sleeve of a patient stiff with the purulent discharge from a foul ulcer,”—lymph taken from vesicles on the ninth day, the unfortunate vaccinifer, only three months old, and suffering from twelve pocks, being carried about from village to village and used to vaccinate 104 children. These horrors were not, I am thankful to say, perpetrated in England, and though they have often been used for the purpose of bringing vaccination into disrepute, they prove nothing but the fact that the persons who in these cases undertook to perform the operation were both ignorant and incompetent. They do not give any support to the theory which has been based upon them that the deep-seated ulcerations and violent inflammations which have followed such vaccinations, are a normal stage in the evolution of cow-pox.<sup>1</sup> According to Creighton “the use of the virus from a late period of the vesicle or ulcer reproduced and gave fixity to that section of the natural history of cow-pox which is ordinarily kept latent by careful attention to the period of maturation.” No comment is necessary,—if pus be inoculated the results of purulent infection may be expected.

<sup>1</sup> Although, as stated on p. 56, complications may, in rare instances, follow vaccination, even when carefully performed, it is certain that if the child is healthy, its surroundings wholesome, the lymph carefully selected and properly used, and if reasonable care be exercised after vaccination, the risk of the operation is infinitesimally small.



*Grounds which would justify Compulsory Vaccination.*

It is obvious that in order to justify compulsory vaccination it should be shown—

I. That vaccination does prevent and modify smallpox.

II. That the risk or discomfort to the individual is not out of proportion to the good gained by the community.

III. That no other method exists equally efficient and at the same time free from those objections which are urged against vaccination.

I. Notwithstanding the ingenuity which has been expended in attempting to prove the contrary, the evidence on the first point—the favorable influence of vaccination in lessening the liability to smallpox and in modifying its course and fatality—is overwhelming.

I will consider briefly the nature of this evidence, and also some of the arguments which have been adduced to show that it is unreliable or fallacious.

Three points call for special attention :

(i) The general diminution of smallpox mortality.

(ii) The altered age incidence of smallpox on those attacked.

(iii) The protective influence of vaccination as evidenced by systematic investigation into particular epidemics of smallpox.

(i) The diminution in mortality from smallpox during the present century is admitted. All who have studied the subject will agree that although there have been outbreaks, such as that which occurred in 1871–2, in which the mortality has been great, the prevalence of the disease has, on the whole, been gradually diminishing.

This diminution in mortality cannot be better illustrated than by the following facts which have been pointed out by McVail (*'Vaccination Vindicated,'* p. 44). In 1871, the year of the great epidemic of smallpox, the mortality from that disease in England and Wales was no less than 23,062 out of a total mortality of 514,879, or  $4\frac{1}{2}$  per cent. This death-rate from smallpox was higher than any which has occurred since vaccination was made compulsory, and only on this one

occasion during a period of over fifty years has it attained such dimensions. During last century, however, it was exceeded no less than ninety-three times in London, or to put it in other words there were only seven years during last century in which the London death-rate from smallpox was less than that for England and Wales in the year of the great pandemic of 1871.

What, then, is the cause of this diminution in the mortality from smallpox? Is it due to the gradual and natural dying out of an infectious disease?—to the cessation of smallpox inoculation?—to improved sanitation?—or is it the result of vaccination? Such are the questions which have briefly to be considered.

To the first question it is not possible to give a very definite answer, since there are no accurate data for arriving at an exact conclusion.

With regard to the second, Dr. Collins and Mr. Picton in their dissent from the final Report of the Royal Commission on Vaccination, appear to incline to the belief that the diminution in smallpox in the early part of the present century was due to the diminution in the practice of smallpox inoculation which followed the introduction of vaccination. When, however, they discuss the introduction of vaccination they adopt the view that the early lymph used was in fact variolous lymph, and that the early vaccinations which assured the adoption of the practice of vaccination was really variolation.<sup>1</sup> In adopting this view Mr. Picton and Dr. Collins are landed in a dilemma; either the introduction of the so-called vaccination lessened the prevalence of smallpox, because it lessened variolation, and was therefore according to this view not variolation; or it was variolation, and could not on this hypothesis have lessened smallpox.<sup>2</sup>

Some other explanation for the diminution of smallpox,

<sup>1</sup> Mr. Picton ('Contemporary Review,' 1896, p. 485), indeed, talks of the disease (smallpox) being "kept alive by inoculation." He even goes so far as to speak of Dr. Collins's masterly proof that Woodville's operations, upon which in the first years of the century the case for Jenner almost exclusively rested, were most of them, if not all, inoculations of smallpox.

<sup>2</sup> Cf. *The Report of the Royal Commission on Vaccination, a review of the dissentient statement.* By T. C. McVail, M.D. Read before the Epidemiological Society, February 19th, 1897.

which is admitted even by the opponents of vaccination, must therefore be looked for.

(ii) The question of sanitation in relation to the diminution of smallpox may best be considered in connection with the altered age incidence of the disease, a fact which must be admitted to have taken place during the last half of the present century. Formerly smallpox was markedly a disease of childhood; adults were comparatively free, probably because so many of them were protected by previous attacks. Now-a-days, as may be seen from Dr. Newsholme's diagrams, it is the children who are mainly free, and the adults who show the highest mortality. This altered age incidence is one of the most striking points in the history of vaccination, and much has been written to show that it has nothing to do with the "Jennerian rite," but is mainly if not entirely due to sanitation. Whether this is so or not can best be considered by inquiring what effects sanitation has had on the death-rate of children under five years of age, from those other diseases which are justly considered as mainly infantile disorders.

The following table quoted by McVail shows that whereas the death-rate for smallpox has diminished 50 per cent., in two other diseases—scarlet fever and diarrhœa—it has increased; in three—diphtheria, whooping-cough, fevers, including typhus, typhoid, and ill-defined—it has diminished slightly; and in one—measles—it has remained stationary.

TABLE I.—*Showing Death-rates for Children under Five years of age from Smallpox, Measles, and other Diseases compared with the Death-rate at all ages taken as units.*<sup>1</sup>

	1851-60.	1861-70.	1871-80.
From all causes . . . .	3·0	3·0	2·9
„ Smallpox . . . .	4·7	4·0	2·2
„ Measles . . . .	6·8	6·8	6·8
„ Scarlatina . . . .	4·7	4·7	4·8
„ Diphtheria . . . .	4·0	4·1	3·9
„ Whooping-cough . . .	7·2	7·2	7·1
„ Fevers (including typhus, typhoid, and ill-defined) .	1·5	1·4	1·3
„ Diarrhœa . . . .	4·9	5·6	6·1

<sup>1</sup> From pages cxii—cxiii of the Registrar-General's 'Supplement to the Forty-fifth Annual Report.'

If the lessened infantile mortality from smallpox be due to improved sanitation, the effect should be evident, as pointed out by McVail, during the first few months of life, when the influence of vaccination would not yet have come into play ; but if it be due or mainly due to vaccination, the lessened mortality would be expected to show itself after the new factor had been introduced.

Now in the nine years previous to 1863, the date at which the Scottish Vaccination Act first came into operation, out of every 1000 deaths from smallpox, 139 occurred in children under six months of age. During the twenty-four years subsequent to the passing of the Act, 138 per 1000 of all deaths from smallpox occurred in the same age period. In fact, the proportion remained practically unchanged.

At six months of age vaccination came into force, and while in the nine years prior to the passing of the Acts, 153 out of every 1000 deaths from smallpox occurred during the second six months of life, in the twenty-four years subsequent to the Act that number was reduced to forty-seven, or almost to one quarter. Thus it would appear that vaccination and not sanitation was the cause of the change of age incidence, at any rate in Scotland.

Let me turn again to Leicester. If sanitation and not vaccination has altered the age incidence of smallpox, an unvaccinated and sanitary town like Leicester should in any severe epidemic have much less smallpox amongst its children than a comparatively well vaccinated and unsanitary town like Sheffield, yet such is not the case. In Sheffield during the epidemic of smallpox, 1887-88, the death-rate in children under ten years of age was 25·6 per cent., whilst in the outbreak at Leicester in 1892 it was not less than 66·6 per cent.



TABLE II.—*Child Mortality from Smallpox in relation to the Neglect of Vaccination in Six Towns which have recently suffered from Smallpox Epidemics.*<sup>1</sup>

1 Town.	2 Date of epidemic.	3 Total of smallpox deaths.	4 Percentage of total deaths from smallpox borne by children under 10 years of age.	5 Vaccination default.
Warrington .	1892-93	62	22.5	Very slight.
Sheffield .	1887-88	589	25.6	"
London .	1892-93	182	36.8	In 1883-91, 10 per cent.
Dewsbury .	1891-92	110	51.8	In 1882-92, 32.3 per cent.
Gloucester .	1895-96	443	64.5	In 1885-94, 10.6 to 85.1 per cent.
Leicester .	1892-93	21	71.4 <sup>2</sup>	In 1883-92, 43.8 to 80.1 per cent.

The altered age incidence of smallpox is well shown in the following chart, for which I am indebted to Dr. Newsholme. It gives the proportion per 1000 of deaths from smallpox which occurred during each quinquennial period of life up to forty-five during the years 1848 to 1894.

Dr. Newsholme's table does not show or attempt to show the *total* number of smallpox deaths which occurred in each group of years, but it shows merely the percentage of the total smallpox deaths which occurred at each period indicated, so that a greater or less total mortality would make no difference in the curves.

The greater rise in the curve in the later periods, fifteen to forty-five years and upwards, is due probably to two causes: (a) to the lessened proportion of cases which occur before fifteen; and (b) to the fact that since smallpox has ceased to be a disease of childhood, a lessened proportion of persons subsequently exposed to infection are protected by a previous attack.

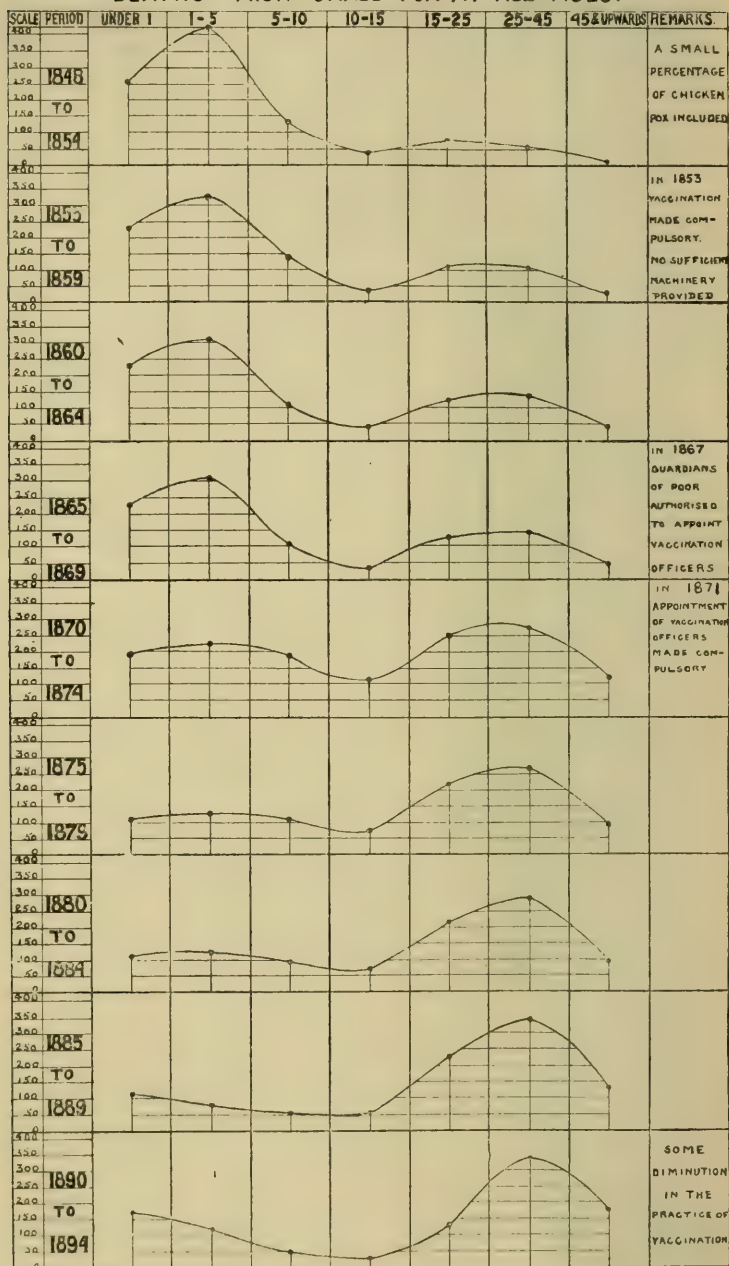
Much ingenious reasoning has been resorted to in order to avoid the conclusion that the present comparative immunity of children from smallpox is due to vaccination. The fact remains unquestioned. It is certain that this change of age

<sup>1</sup> 'Final Report of the Royal Commission on Vaccination,' pp. 50 and 176.

<sup>2</sup> Excluding the deaths of 3 patients in a scarlet fever ward in close proximity to the smallpox hospital, this proportion would be reduced to 6.66 per cent.

# ENGLAND AND WALES

## DEATHS FROM SMALL POX AT CERTAIN AGE PERIODS TO 1,000 DEATHS FROM SMALL POX AT ALL AGES.



incidence has become increasingly marked as the infantile population came to be increasingly vaccinated, and has been becoming less marked in the last five years, during which the default in vaccination has become pronounced. Thus during the years 1875–89, when the infantile mortality from smallpox was lowest, the vaccination default was only 5·5 per cent. for England and Wales; and during the four years 1890–93, when the infantile smallpox mortality had increased as shown on the diagram, the average vaccination default had risen to 14·4 (cf. tables on pp. 34 and 47, ‘Final Report of Royal Commission on Vaccination’).

If any cause other than vaccination exists for this change it has yet to be discovered, since no other adequate explanation has as yet been adduced.

(iii) The evidence of the protective influence of vaccination in individual outbreaks of the disease has never been more fairly collected, more dispassionately sifted, or more rigorously criticised than by Dr. Coupland in his reports on the outbreaks at Dewsbury, Leicester, and Gloucester. A summary of his investigations has been published recently in the ‘Lancet’ (1897, pp. 510 and 582), where the diagrams which exhibit in a graphic form the results at which he arrived will be found. The following table, which speaks for itself, gives the data from which the diagrams have been compiled.

TABLE III.—*Showing numbers of Attacks and Deaths amongst those exposed to Smallpox in certain outbreaks inquired into by Dr. Coupland.*—('Lancet,' 1897, vol. i, p. 511.)

	Exposed.		Attacked.		Died.	
	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.
<i>Under 1 year.</i>						
Dewsbury . . . . .	16	59	1	24	0	16
Leicester . . . . .	1	32	0	7	0	2
Gloucester . . . . .	14	153	0	80	0	56
<i>1 to 10 years.</i>						
Dewsbury . . . . .	400	254	43	133	1	31
Leicester . . . . .	77	251	2	93	0	10
Gloucester . . . . .	258	1178	24	537	1	192
<i>10 to 30 years.</i>						
Dewsbury . . . . .	1125	224	341	141	5	19
Leicester . . . . .	438	96	104	47	0	3
Gloucester . . . . .	1649	102	539	55	30	18
<i>30 years and over.</i>						
Dewsbury . . . . .	833	68	187	15	7	4
Leicester . . . . .	321	9	64	3	1	1
Gloucester . . . . .	1465	42	465	17	64	9
<i>Age uncertain.</i>						
Dewsbury . . . . .	21	—	—	—	—	—
Leicester . . . . .	9	—	—	—	—	—
Gloucester . . . . .	—	—	—	—	—	—

The conclusions at which he arrived are in general agreement with those which are enunciated in the final report of the Royal Commission on Vaccination. The most important of them are as follows :

(a) When an outbreak of smallpox occurs in a community of which a large proportion of the child population is unvaccinated, the attack-rate and mortality are highest in the early years of life, *i. e.* under ten years.

(b) That vaccination has a marked influence in diminishing liability to attack, and to a fatal issue, an influence most apparent in early life, but obtaining a lessening degree at later periods, the rates amongst the vaccinated being always below those of all classes of the unvaccinated at the same period.



(c) That although great variations may exist between different outbreaks as regards the general attack-rate and mortality, irrespective of the proportion of the vaccinated and unvaccinated in the community, yet in every instance a similar disproportion exists in the attack-rate and mortality of the vaccinated and unvaccinated respectively.

(d) That whatever may be the local conditions or circumstances, the amount of isolation, and other less obvious factors whereby the extent of an outbreak is influenced, the unvaccinated members invariably are more liable to be attacked, besides yielding a rate of fatality considerably in excess of that which results amongst the vaccinated section.

A vast amount of evidence of the same kind might be brought forward, but I will only call attention to two tables, one showing the attack-rate, and the other the incidence of mild and severe smallpox on the vaccinated and the unvaccinated, which are so striking that they cannot be omitted.

TABLE IV.—*Smallpox Attack-rate of Vaccinated and Unvaccinated Persons under and over ten years of age, in five towns in which Smallpox Epidemics have recently occurred.*<sup>1</sup>

1 Towns.	2 Date of epidemic.	3      4 Attack-rate under 10.		5      6 Attack-rate over 10.	
		Vaccinated.	Unvaccinated.	Vaccinated.	Unvaccinated.
Sheffield . . .	1887-88	7·9	67·6	28·3	53·6
Warrington . . .	1892-93	4·4	54·5	29·9	57·6
Dewsbury . . .	1891-92	10·2	50·8	27·7	53·4
Leicester . . .	1892-93	2·5	35·3	22·2	47·6
Gloucester . . .	1895-96	8·8	46·3	32·2	50·0

<sup>1</sup> 'Final Report of the Royal Commission on Vaccination,' p. 65.

TABLE V.—*The Incidence of Mild and Severe Cases of Small-pox on Vaccinated and Unvaccinated Persons attacked during Five recent Smallpox Epidemics.*<sup>1</sup>

Local epidemics.		Mild.	Severe.
London	{ vaccinated . . .	89·0	11·0
	{ unvaccinated . . .	35·2	64·8
Sheffield	{ vaccinated . . .	82·8	17·2
	{ unvaccinated . . .	18·5	81·5
Dewsbury	{ vaccinated . . .	82·0	18·0
	{ unvaccinated . . .	23·1	76·9
Leicester	{ vaccinated . . .	81·4	18·6
	{ unvaccinated . . .	27·2	72·8
Warrington	{ vaccinated . . .	78·2	21·8
	{ unvaccinated . . .	29·4	70·6

Attempts are made to damage the value of these and similar observations by showing that sometimes vaccinated infants die of smallpox and that the protection is neither absolute nor permanent. It is a matter of common knowledge that the protection afforded by vaccination, great though it is, has limitations. It is doubtless limited by more circumstances than can always be reckoned with or appreciated—the activity of the virus, the efficiency of the operation, the power of resistance of the individual, and the many varying factors which make up the sum of any particular “infection.”

Isolated cases do die of smallpox after vaccination, even during the years in which the protection is greatest, but these isolated cases do not allow any escape from the logical conclusion that the unvaccinated suffer and die in far greater proportion than those who have been subjected to this so-called “superstitious rite.”

There are one or two fallacies to which I would draw attention, which are constantly introduced into arguments

<sup>1</sup> ‘Final Report of the Royal Commission on Vaccination,’ pp. 69 and 70.

against the protective influence of vaccination. The first and most frequent is that which is due to the necessary division of cases into vaccinated and unvaccinated. At first sight it would appear that this classification was a fair one, and that vaccinated meant those protected by vaccination, and that unvaccinated meant those who from some default had failed to be vaccinated. This is far from being the case; for in the first class of cases are included all persons who are stated to have been vaccinated, however inefficiently the operation may have been performed, also those who having arrived at the age of adolescence are known to be but little protected. Ample evidence has been given to show that the period of highest protection may fairly be stated as covering nine or ten years, and that after this period it rapidly diminishes although it is never wholly lost.

Mr. Picton (*'Contemporary Review,'* 1896, p. 497) admits this fact, for he says, "according to weighty evidence every child after ten years from the date of primary vaccination becomes practically an unvaccinated person;" yet he states on a previous page (p. 488) that "we ought rarely to hear of a vaccinated person being attacked with smallpox." Every one who has been vaccinated, of whatever age, is classified as a "vaccinated person," regardless of the fact that through lapse of years the immunity acquired in infancy may long ago have ceased to exercise any real protective influence. Accordingly, in the later decennial periods of life more and more "vaccinated persons" are found to be attacked by smallpox, although the total case fatality is never quite the same as in the unvaccinated. For this reason it is necessary always to distrust statistics which profess to show the relative incidence of smallpox in the vaccinated and unvaccinated unless the whole of the circumstances are placed on record.

Referring to the unvaccinated, Mr. William White, writing in 1884 (*'Sir Lyon Playfair taken to Pieces, &c.,'* London, 1884, p. 163) says, "at present the unvaccinated afford no data for a just comparison with the vaccinated. The unvaccinated are those who are rejected as too feeble to undergo the vaccine fever, or those who are the offspring of the wretched and homeless, and thus escape detection by the

vaccination officer; with whatever disease afflicted, the unvaccinated would therefore compare unfavorably with the vaccinated. The children of disbelievers would, on the other hand, afford a fair test of the advantage of unpolluted blood. The experiment would be not only valuable in a scientific sense, but it would be a worthy exploit on the part of statesmen whose profession is hatred of oppression and reverence for the rights of man."

Fortune has favoured Mr. White, and Leicester the acknowledged home of "disbelievers" has provided material for the experiment, whilst Gloucester, Dewsbury, Warrington, Sheffield, and London, have each in their turn contributed valuable evidence as to the "advantage" of meeting smallpox with that which Mr. White calls "unpolluted blood." Mr. Picton ('Contemporary Review,' October, 1896, p. 493), points out triumphantly that in 1872 no less than 346 deaths from smallpox occurred in thoroughly vaccinated Leicester; whilst in 1893 in practically unvaccinated Leicester there were only 357 persons attacked by the disease, of whom twenty-one died. He gives no details as to age, vaccination and non-vaccination, nor case fatality in the first outbreak, and I have been unable to procure any reliable figures as to these points. At first sight it would appear, as intended, that, presuming the virulence of the disease to have been the same in the two years, Leicester suffered far less in the year 1893, when vaccination was almost in abeyance, than in 1872, when vaccination was enforced. But facts assume a different aspect when it is remembered that 1871-72 was the year of the great pandemic of smallpox. Further, Dr. Coupland has shown that in this single outbreak (which, according to Mr. White's conditions, should have afforded conclusive demonstration of the advantage of being unvaccinated), out of ninety-nine unvaccinated children attacked, no less than twelve lost their lives, the majority of whom (if not all), would it is probable have survived if they had been protected by vaccination; whilst only two children who had been vaccinated were attacked, neither of whom died.<sup>1</sup>

<sup>1</sup> Dr. Coupland's figures do not quite agree with Mr. Picton's, but they show that, taking all ages, out of 320 persons attacked, seventeen died, of whom no less than sixteen, or 94 per cent., were unvaccinated.



With reference to what has been said above as to the necessity for viewing all statistics with suspicion which do not give the age incidence of smallpox in the two classes, vaccinated and unvaccinated, it is equally necessary to be cautious and to see that the figures have not been so selected as to give an erroneous impression of the facts, as for instance, in the following table taken from p. 184 of Dr. Collins' and Mr. Picton's Dissent from the 'Final Report of the Royal Commission on Vaccination.'

TABLE VI.—*Mean Annual Deaths from smallpox in England and Wales at different ages per million living at certain life periods.*

			0-	5-	10-	15-	25-	45 and up- wards	Mean death- rate per million living for the years selected.	Mean annual death-rate per million living.
A.	Collins and Picton	1847-53 Voluntary vaccination	1617	337	94	109	66	22	2130	355.0
		1872-80 Compulsory vaccination	323	186	98	173	141	58	1434	159.3
B.	Newsholme	1875-84	128	63	46	82	77	34	715	71.5

A.—Dissent of Dr. Collins and Mr. Picton from 'Final Report of the Royal Commission on Vaccination,' p. 184.

B.—Dr. Newsholme, 'Public Health,' 1896, vol. ix, p. 44.

It is here stated that if a comparison be instituted between the smallpox death-rate at different ages during the period 1872-80 (when vaccination was as efficiently enforced as it ever has been), with the period 1847-53 (when the practice was voluntary), at every age over ten years the chance of dying of smallpox was greater in the period of compulsory vaccination. Let me point out the fallacies:

The years chosen are selected judiciously so as to include in one period the epidemic of 1871-72, with another in which no great epidemic happened to occur. Smallpox, as has been said, is a disease which becomes epidemically

prevalent, and it varies greatly in virulence, as do all other infectious diseases, so that to arrive at any sound conclusion as to any protection afforded by vaccination, it would be necessary to show,—not that in one period a greater or less number of persons were attacked or died, as compared with some other period taken quite arbitrarily, but—that during a particular outbreak the mortality amongst the vaccinated was less or greater than amongst the unvaccinated.

For the sake of argument let another period, 1875–84, be taken for comparison with the one fixed upon by Dr. Collins, and, as has been shown by Dr. Newsholme, there is a gain at each successive life period up to the age of twenty-five.

The fact is that the only certain deductions which can be made from this table (No. VI) are that the mortality from smallpox under ten years of age—that is during the years when primary vaccination would have its maximum effect—had enormously diminished, and that proportionately the incidence of fatality had fallen on the later years of life. The mean annual death-rate from smallpox shows a marked diminution during the latter of the three periods. This is clearly seen by the following figures, for which I am indebted to Dr. Newsholme.

Mean annual death-rate from smallpox in England and Wales—

During the years 1847–53	.	.	.	355.0
„ „ 1872–80	.	.	.	159.3
„ „ 1875–84	.	.	.	71.5

II. That the risk or discomfort to the individual is not out of proportion to the good gained, has been incidentally shown.

III. Let us now turn to consider what means of combating smallpox have been suggested as alternatives to vaccination.

Whatever alternatives to compulsory vaccination may have been proposed as preventives or safeguards against smallpox, it must be admitted that none capable of lessening the liability to attack from smallpox after exposure to infection or of modifying the severity of the disease have as yet with any show of reason been suggested; vaccination in these particulars stands alone and unrivalled. The methods which have been

suggested to supersede vaccination do not attempt to deal with smallpox until it has actually arisen or until the individual has been exposed to infection. It is as though elaborate preparations should be made for extinguishing a conflagration, but no care taken to prevent its occurrence.

It is proposed that there should be,—inspection, notification, isolation, for those exposed to infection,—detention in hospital for those suffering from the disease.

Without compulsion in many instances such suggestions could not be carried out ; they would certainly be inadequate, and therefore worse than useless, in any severe outbreak of smallpox. It is difficult to realise the logical position of those who would propose such an amount of compulsion, when they view compulsory vaccination with abhorrence because it interferes with the liberty of the subject. It calls to mind the Irishman's definition of liberty ; “ that a man should think what he likes, say what he likes, and do what he likes, and, by Jabers, if he doesn't, he should be bate with a stick until he does.”

Is it not probable that compulsory isolation on a large scale would be far more opposed than vaccination ? In the first place it would dislocate the affairs of numbers of persons in good health ; again, it would have to deal with so many stages of society that great difficulties would arise. All persons, of whatever rank or position, could not well be placed in one isolation station. The rich man would refuse to be content with that which satisfied the poor man ; the mistress would not put up with accommodation which was ample for the maid. I am afraid that the “ conscientious objections ” of those in good health who had been exposed to infection would be “ so strong ” that they would conceal the fact and elude the quarantine. The fact is, that when it came to the test, the machinery would almost inevitably break down from various causes, as it did in Leicester under the very limited strain of the outbreak in 1893.

It cannot be doubted that vaccination in infancy and re-vaccination about puberty, whatever its disadvantages, causes far less inconvenience, far less outrage to the personal feelings and liberties of the individual, than would even the mildest form of that inspection, quarantine, and

isolation, which is proposed as a substitute for it. Those who uphold the isolation scheme for stamping out smallpox, have reckoned but little with the human element in mankind. Adults who were not ill would certainly have their own views as to the amount of restraint to which they would submit; human nature would belie itself should they be found more ready to submit to the new scheme of compulsion than they have to the old, and it may well be doubted whether it would be expedient to replace by an untried remedy one which, like vaccination, has been put to a severe test and not found wanting.

Admitting that isolation and quarantine are useful in combating a fearful disease, they ought to be employed not to the exclusion of other methods of modifying or warding off the malady, but as auxiliaries.

Since, therefore, it does not appear that any superior method for preventing or mitigating smallpox exists, which might be adopted in the place of vaccination, the objections to compulsory vaccination, as has been said, are only tenable if it can be shown that it is not protective against smallpox, or that being protective the risks or inconveniences of the operation are so great that they do not justify compulsion. Neither of these pleas can be established in face of the great mass of evidence as to the protective value of vaccination and the small risks of the operation.

The logical conclusion seems to be not that vaccination should no longer be compulsory, but that compulsory re-vaccination should be required, although in the present state of public feeling this may be undesirable. It has to be remembered that compulsion promotes opposition, and it was with the avowed object of lessening this opposition that the recommendation against the enforcement of repeated penalties was framed by the Royal Commission.

It cannot be doubted that there are grave objections to the infliction of a fine for non-compliance with the Vaccination Act. It presses more hardly on the poor than on the rich, and the only thing to be said in favour of this inequality is that the poor, from overcrowding, bad living, inattention to sanitary details, are more likely to suffer from smallpox, and also less in a position to repay the cost of their main-



tenance should the community, owing to their contracting the disease, have to take charge of them. At the same time if there is to be a fine, let it be a sufficient one to act as a deterrent. It costs the community about 2s. 6d. to have an individual vaccinated, but at least £8 to £10 to take care of him while he has the smallpox, so that on economic as well as on other grounds prevention is better than cure.

One word more, and I have done. It is to be most earnestly hoped that this question may not degenerate into one of mere party politics. It is a great scientific question of public health, which should be far removed from all considerations except that which is best for the greatest number. *Salus populi suprema est lex.*

*Note.*—For detailed information on many of the points raised the reader is referred to the following papers :

Three articles on the clinical, pathological, and public health aspects of vaccinia and vaccination, in ‘A System of Medicine,’ edited by T. C. Allbutt, M.D., 1897, vol. ii, p. 555.

“Reports on the Influence of Glycerine, of Lanoline, and of Vaseline in inhibiting the growth of Micro-organisms commonly found in Vaccine Lymph,” by Dr. S. Monckton Copeman and T. R. Blaxall, ‘Twenty-fifth Annual Report of the Local Government Board,’ 1895–6 ; Supplement, Appendix C, p. 283.

‘The Report of the Royal Commission on Vaccination, a Review of the Dissentients’ Statement,’ by T. C. McVail, M.D. (Read before the Epidemiological Society, February 19th, 1897.)

“Some Smallpox Statistics,” by Sidney Coupland, M.D., ‘Lancet,’ 1897, vol. i, pp. 510 and 582.

‘English Vaccination and Smallpox Statistics, with special reference to the Report of the Royal Commission and to Recent Smallpox Epidemics,’ by Noel A. Humphreys. (Read before the Statistical Society, February 19th, 1897.)

Mr. Picton in the ‘Contemporary Review,’ 1896, and Mr. Malcolm Morris in the ‘Nineteenth Century,’ 1896, have discussed the conclusions of the Royal Commission on Vaccination from opposite points of view.

Dr. McVail's paper exposes the weakness of the position taken up by Mr. Picton and Dr. Collins in their dissent from the final report of the R.C.V.

In Dr. Coupland's record of his investigations into the outbreaks of smallpox at Gloucester, Dewsbury, and Leicester, the question of the protective influence of vaccination is discussed. His observations were conducted with every safeguard against error, and his facts and conclusions will repay careful study.

# ON THE SURGICAL TREATMENT OF LUPUS.

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THERE are few diseases of a chronic type that have brought more disappointment and less success to the physician and surgeon than lupus. Drugs have been found almost powerless for good ; the strongest caustics, chemical or thermal, have seldom done more than supplement the ravages of the disease ; the growth has been scraped out of its bed by the curette, only to reappear before nature has found time to repair the surgical injury ; the knife, timidly used, has had no better result, and bacteriology has only suggested possibilities in the future. Lupus is still as defiant as in the dark ages.

This obstinate resistance against local treatment is a curious problem. The affected tissues show fair evidence of natural reparative force,—in fact, more or less repair almost always goes hand in hand with the destruction ; the disease almost invariably confines its ravages to the superficial structures, skin, or mucous membrane, in which it originates ; it rarely manifests any of the fatal tendency so conspicuous in the typical malignant growths, to migrate to other parts through the lymph or blood stream ; and yet surgery has been able to attain a far greater success in the extirpation of cancer than in that of lupus. Lupus is now recognised as a tuberculous affection, slower in progress and more easy of access than tuberculous disease

of the bones and joints ; but while the surgeon attacks the white swelling or the caries with good hope of a cure, he is thwarted by a patch of lupus no bigger than the palm. The explanation probably is that a bold and skilful surgery is usually exercised in the one case, and only half-hearted measures in the other. While a cancer of the tongue or of the breast, a tuberculous knee or tarsus, has been from the first in the hands of the surgeon, and treated in accordance with the most recent developments of his science, the local treatment of lupus is only just emerging from the mediæval phases. The aim of the surgeon in his treatment of cancer is to remove the whole of the disease, not only the part that is visible to the eye, but that which he knows to exist outside the obvious focus ; the dermatologist is too often content to burn his lupus with caustics, or to scoop out the obvious nodules that yield with such fatal facility to his curette, rarely attempting to deal with the apparently healthy tissues which conceal the bacillary sappers and miners who are at work in advance of the main body. It is the timidity which has respected the infected skin and subcutaneous tissue lying beyond the macroscopic disease that has brought so much disappointment to the operator : the new growth must of course be removed, but with it must go the infecting area beyond, or our labour is lost. This infection has been traced in the skin, or mucous membrane and subjacent tissue bordering the growth, and beneath and even within the fibres of the cicatrix left by the disease or the surgeon, and is always most virulent in the tissues on the spreading side of the growth. Unless these facts are borne in mind the surgical treatment is likely to be of little avail.

The problem of local extirpation is only in course of solution, but even when it is solved the triumph will still remain incomplete. However completely the local disease for which the patient consults us may be removed, the constitutional predispositions remain, and are only to a limited extent under control. Hence we cannot prophesy that a person who has been delivered from a patch of skin tubercle by the skill of the surgeon will not become subject to another outbreak in a near or distant part of the



surface ; but we should be able to look forward with fair confidence to the local success of any individual operation, and we can promise an easy victory over any new manifestation that is brought at once under observation, and not fostered by delay and irritated by half-measures. At some future time we may hope that the advance of sanitation will confine the prevalence of the tubercle bacillus within comparatively harmless limits, or that a successful form of preventive inoculation on Jennerian lines may be discovered, and mankind so delivered from its most terrible scourge ; but in the meantime we must do our best to improve the materials and methods at our command.

Setting aside the general treatment of lupus, which of course must vary with the special circumstances of each case, the available remedies for the disease may be classified as follows :

1. The internal administration, by injection or otherwise, of materials which are believed to affect specifically the seat of disease through the blood. Under this heading come tuberculin and thyroid extract.

2. Local inoculation with common pyogenic or other organisms, with the object of destroying the tubercle bacillus, and so enabling the diseased tissues to right themselves.

3. Destruction of the affected area by chemical or thermal agents.

4. The use of operative measures either for the direct removal of the disease, as by erosion or excision ; or to induce its disappearance indirectly, as by scarification.

To these may perhaps be added hereafter the possibility of transmitting through the affected tissues radiant energies, comparable to the X rays, that may destroy the causative organisms without inflicting serious injury upon the tissues.

The specific measures to which attention has most recently been drawn are two : the Tuberculin of Professor Koch, and the internal administration of Thyroid Extract. Of tuberculin it is only necessary to say that its almost complete disuse must be taken as a verdict, but only as a temporary one. It must not be forgotten that it has been proved possible to storm the tubercle bacilli in their very citadels ; and although this may not be safely and effectually

done by tuberculin, even in its newly modified form, the means will sooner or later be perfected, and the result will be one of incalculable magnitude for the benefit of mankind. For the present, however, we can only await a further development of the new researches.

The use of Thyroid Extract stands upon a far less scientific basis, and all that can be said for its results is that they are perhaps better than might have been expected. So far it has been shown that a certain proportion of cases of lupus subjected to favorable hygienic and dietetic conditions, and treated with the extract, may improve up to a certain point. I believe it would be difficult to produce a single example of a complete and lasting cure, but on the other hand I have seen a few cases deteriorate both locally and constitutionally under its influence. That some such remedy, capable of acting specifically upon the growth, may hereafter be discovered is more than possible, but we have no reason to believe that the remedy in question is thyroid extract.

There are yet other agents besides tuberculin to which bacteriological theory has drawn attention, agents locally directed, but yet scarcely coming under the head of surgical treatment. We have had many dreams in recent years of pitting an organism of a manageable nature against another of a more ferocious strain, and there has been some accidental evidence to encourage an experimental application of the idea. It has been noticed from time to time that when a patient suffering from lupus contracts erysipelas, the former disease may undergo a remarkable improvement, or even a temporary cure. We have also seen an erysipelas of the scalp lead to a vigorous new growth of hair upon a head almost denuded of its covering by *seborrhœa sicca*, a disease that all dermatologists now regard as microbic in origin; and huge fibromata of the skin and cellular tissue have almost entirely melted away under the same influence; but there is nearly always the "almost" in the record of a favorable result. It is rarely that the improvement, when it does happen, is more than a passing one; and before we act upon the suggestion of an intentional inoculation of one disease to cure another we must remember that the experiment may prove dangerous as well as inefficacious.

The power of the X rays to destroy certain micro-organisms has opened up a new possibility, and the striking influence exerted by their transit through the integuments in certain individuals is suggestive of a therapeutic use in skin diseases, and particularly in lupus. I am at present, in conjunction with my colleague Dr. Barry Blacker, initiating some experiments to test the question, but it is too early to speak of these yet. We are driven, then, for the present, to treatment of a local character; and here, fortunately, we may show results that have withstood the test of time.

We have the choice of measures which involve a surgical operation, and of those which do not. The physician naturally prefers the latter, and it has been chiefly through his investigations that our resources in the direction of external applications have been so greatly enlarged.

Of the *non-operative* means I shall say little, for the story is so old. We may destroy a patch of lupus by the actual or galvano-cautery, or by caustics either of a selective or of an indiscriminating kind. Of the discriminative caustics, which act by preference upon the unstable lupous growth, while they are resisted by the healthy tissues, arsenic, pyrogalllic acid and salicylic acid may be taken as types. The indiscriminating caustics, which destroy healthy and diseased structures alike, are exemplified by nitrate of silver, chloride of zinc, the mineral acids, and caustic potash. I have employed some of both groups in the milder and more superficial forms of lupus with benefit, and with still greater profit have made use of them as accessories after operation; but as the sole agents in the cure of severe cases I have found them almost uniformly disappointing, and occasionally more than disappointing, for they may irritate a quiescent growth to disastrous activity.

The *operative* measures of scarification, erosion, and excision, all of comparatively recent date, are all of value if boldly and skilfully applied.

*Scarification*, as perfected by Vidal, does not aim at immediate ablation of the growth. It merely cuts up the morbid tissue into minute segments, apparently leaving the infective organisms to the vengeance of the phagocytes attracted to

the part by the surgical summons. The theory is not very satisfactory, and the results are little more so ; but with certain modifications the method may be used with advantage in the more superficial forms of the disease, including lupus erythematosus. When successful it is eminently so, for it leaves a scar that is superior in pliancy, colour, and absence of contraction or hypertrophy, to that which follows any other treatment. The object of the surgeon is to "cross-hatch" the lupous tissue as minutely as possible down to the fibrous bed, a process which requires much experience and delicacy of touch, since a section that falls short of the entire thickness of the new growth will be inefficacious, while one that goes too deep may give rise to troublesome bleeding. The lines should cross in four directions, and should extend about a quarter of an inch outside the apparent area of disease. Various instruments have been recommended for the purpose, but in my experience a common scalpel is the best, as the value of every stroke is appreciated by the finger of the surgeon. In any case the process is painful and sanguinary, and if a large extent of surface is to be dealt with an anæsthetic should be administered.

The "mincing" having been completed, and the bleeding arrested, I have found the immediate application of a 5 per cent. solution of carbolic acid a valuable addendum, and this may be followed by the application of a salicylic ointment, 20 grains to the ounce. By this means large patches have been cured which had resisted all other treatment for years. Scarification, however, is useless for a lupus vulgaris of any great depth, as the nodules will inevitably reappear in a short time, even invading the very centre of the area treated.

*Erasion*, or scraping, a process initiated by Fischer, of Cologne, is the means at present most in favour with dermatologists. Unlike scarification, it aims at the removal of the cell-growth by a sharp-edged spoon or ring-shaped blade, leaving the defensive wall of fibrous tissue by which the surrounding structures endeavour to circumscribe the spread of the disease. The shape and size of the instrument selected will of course vary with the extent and form of the disease. A small spoon-shaped instrument is suitable



for the little nodules, a larger ring curette for wide areas ; but whatever be the tool, it must be used with energy and judgment. All that is to be done on any individual patch should be completed at one sitting, and if possible the whole area of disease should be attacked at the same time. The edge of the curette must be carried everywhere boldly down to the fibrous bed ; and the growing margins, whether solid or undermined, should be scooped away with especial care. The imperfectly formed cicatricial pellicle which often covers in a part of the disease must never be spared, but must be scraped off, together with the thin layer of cell-growth nearly always found beneath it. A hesitating use of the instrument is worse than useless. Considerable force may and should be employed, and the immediate result will be a gap in the textures that looks far larger than might have been expected from the appearance of the disease before the operation began. The greater part of the new growth will have offered little more resistance to the curette than firm jelly, but as the fibrous bed is approached more force is required, and the difficulty will often be greatest where a thin and deceptive epidermic covering has been thrown over the still unhealed disease.

The process, if efficiently carried out, is even more painful and bloody than that of scarification, and calls for a general anæsthetic. Cocaine and its allies are of little or no service as substitutes for chloroform or ether.

The operation over, the bleeding may be allowed to cease spontaneously, or may be arrested by a styptic powder, such as tannic acid. The wound may finally be dressed with iodoform powder, or covered with a salicylic acid ointment.

The first effects of erosion are remarkable ; the area treated quickly assumes a healthy aspect, new epidermis is formed both marginally and centrally, and the whole sore gives a promise of complete and early repair, that unfortunately is seldom destined to fulfilment. Bye-and-bye, nodules show themselves about the borders of the healing patch ; the area of cicatrization, at first thin, even, and transparent, becomes thickened into unsightly ridges, and assumes an unwholesome, veal-like whiteness, diversified by tiny blood-vessels ; and yet a little later the surgeon has the

annoyance of realising that he must begin afresh. Of course this disappointment is not invariable or absolute, but no surgeon of experience will have the boldness to promise a patient with lupus that erosion will cure the disease.

The reason of the frequent failure of the operation, even in the best hands, is that already given. The curette is arrested by the fibrous floor and wall which apparently limit the new growth on all sides; but unfortunately the limitation is only apparent, for the fibrous tissue that resists the instrument is already invaded, and sooner or later will produce a new crop of the apple-jelly-like material by which the disease signalises its presence. The "keloid" thickening of the new cicatrix is not a mere "hypertrophy" of scar, it is a scar lupus; and new nodules will show themselves not only at the margins, but may appear in the very midst of the seemingly healed surface. To prevent this failure various supplementary measures have been added to the curettage. Caustics of different kinds have been applied after the scraping has been completed, and the knife has been employed in a manner that will be referred to later. In former years I was in the habit of applying caustic potash to the scraped area and about the spreading border immediately after the operation, neutralising the alkali with acetic acid as soon as the required effect was judged complete; the surface was then dusted over with iodoform, which formed with the mingled blood and chemical products an aseptic scab that remained until the healing process was complete. The result was often excellent; but I have since replaced the potash by an ointment of salicylic acid in the proportion of 20 or 30 grains to the ounce of vaseline, with 20 or 30 minims of creasote. Under this cicatrization goes on with remarkable quickness, and the scar is of a more satisfactory kind. Chloride of zinc paste and many other chemicals have also been used with the same purpose in view—the destruction of germs that might otherwise provoke renewed mischief after the curette had done its work.

Erosion, then, I believe to be untrustworthy as a sole method, but in association with other surgical resources it is of great value when the area is too large for a more radical treatment. The patient represented in Fig. 1, after having

undergone all kinds of treatment for many years without success, was subjected to erasion followed by the application of caustic potash, and supplemented by the excision of a few marginal recurrences. As a result he is restored to a social life and employment from which he had long been excluded by the repulsive aspect of his disease.

Before quitting the subject of erasion a word may be said as to its diagnostic value. Occasionally lupus may be closely simulated by destructive eruptions dependent upon inherited syphilis, and the so-called "syphilitic lupus" mistaken for the tuberculous disease has been subjected to a good deal of needless local treatment. Should the curette be used, it will be found that the syphilitic tissue, instead of shelling cleanly out of its hollow in the derm like the lupus cell-growth, strongly resists scraping, and conveys so different an impression to the tactile sense that an experienced operator is at once apprised of his mistake.

*Excision* in the treatment of lupus has been regarded by most dermatologists either as a last resource or as altogether unjustifiable, but a few have thought differently, and have employed it with great success. During the past fifteen years I have adopted it in all suitable cases, and in these, if it be carried out in the light of modern science, I believe it should be not a final resort but both the alpha and the omega of the surgeon. For patches not exceeding a crown piece in size I have found it by far the most successful, the most speedy, the most thorough, and, in its results, the most permanent and sightly of all plans. The removal is quickly effected, and if properly executed it leaves very little contraction. The wound may be treated in three different ways according to circumstances. If small and conveniently situated it may be closed immediately by suture, leaving a linear cicatrix; if large, or otherwise unsuitable for closure, it may be covered either immediately or after a short interval with an epidermic graft, and the healing process in any case is concluded within a period of two or three weeks. Recurrence is exceptional,—that is recurrence within the cicatrix or at the borders of the excised patch; but should a new focus arise in any part of the body, its existence may be terminated promptly by the same process. Much larger

FIG. 1.



Patient æt. 27. Had suffered from lupus for twenty years, the disease involving the lower part of both cheeks, the lower lip and chin, both sides of the neck down to the clavicle, and the mucous membrane of the lower lip and buccinator region; centre and margin ulcerated. Treated by caustics and curetting on many occasions. In 1892 curetted and cauterised immediately afterwards with *potassa fusa* at St. Thomas's Hospital with almost complete success. A few marginal recurrent nodules excised in 1894, and one in 1896. Now quite well. Area of original growth indicated in dotted line.



FIG. 2.

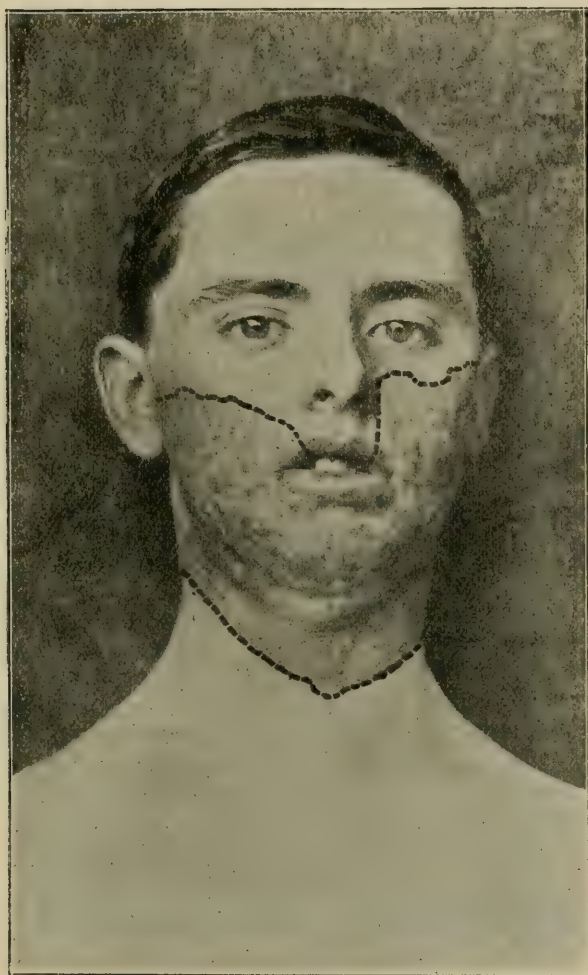


Patient æt. 21. Duration of lupus twelve years. Extent of disease indicated by dotted lines. Margins ulcerated. Cured and cauterised on several occasions without success. In 1894 the largest patch, measuring  $2\frac{1}{2}$  inches by 2 inches, was excised, and the keloid ridges were shaved. Small marginal nodules were excised in 1895-6. From a photograph by Mr. Ernest Cobb, Clinical Assistant in the Skin Department, St. Thomas's Hospital.

areas than those named may be treated on the same lines when the surgeon has gained confidence in the method. I have excised patches covering nearly the whole of the cheek, and sometimes extending to the submaxillary region and even the lower portion of the opposite cheek, completing the operation at a single sitting, and without inducing any perceptible shock ; but where these extensive operations are undesirable, I have adopted a plan of excising the growing borders of the disease, vigorously curetting the rest, covering the whole with salicylic ointment until cicatrization is well started, and then using epidermic grafts if necessary. In most of these cases, however, the formation of new epidermis under the salicylic acid is so rapid that little is to be gained by grafting, and the entire process may be left to nature. The patient in Fig. 3 was so treated, and although the scar is less uniform in level than where a complete excision is practised, it is sound and presentable.

The method of the excision is simple. The line of incision is placed (where possible) a third to a half of an inch from the most rapidly spreading edge, but may approach to within a quarter of an inch of the more quiescent parts of the border. On the trunk or limbs the section may be carried down to the deep fascia if the subcutaneous tissue is scanty, or well into a thick layer of fat, and the process is quickly accomplished ; but in the face the removal is much more difficult, and calls for some practical experience. The section here must run into the integumentary covering without exposing the muscles or the branches of the facial nerve, and the depth within these limits must be adjusted to the degree of infiltration of the tissues by the new growth, taking care to remove the whole of the disease and a certain portion of the apparently healthy structure beneath. The bleeding from the skin arteries is very free, but never serious in its results if proper precautions are taken. The surface left after the hæmorrhage is checked is of yellowish colour, from the fat lobules embedded in the connective tissue, and fairly elastic. If now the surgeon believes that his section has passed well below the lupous cell-growth, he may at once proceed to close the wound by suture if possible, or to cover it in by grafts ; but should he be in doubt on this point it will be better to apply

FIG. 3.



Patient æt. 22. Disease of fourteen years' duration, involving at time of admission into hospital (1897) both cheeks, lower lip, and chin, the greater portion of the upper lip, and the upper half of the neck; not ulcerating, but spreading actively at margins. Treated by marginal excision, central erasion, and immediate application of salicylic ointment. Rapid cicatrisation. No sign of return three months afterwards. From a photograph by Mr. Ernest Cobb.

immediately a layer of salicylic ointment spread on strips of lint over the raw surface, and dress it daily until healthy granulation is established and marginal cicatrization has commenced. It may then be grafted in the usual manner. On the neck, limbs, and trunk, and occasionally on the face, the raw surface may be covered in partially or completely by gliding portions of detached integument from an adjacent part, or other resources of plastic surgery may be employed, but this is not often necessary.

The number of patches that may be treated by excision is almost unlimited. I have removed at a single sitting as many as thirty-five, of sizes ranging between that of a three-penny piece and that of a crown, from different parts of the body, nearly the whole of the wounds being closed by sutures.

It is a remarkable fact that the removal of the growing edges of an active patch of lupus has a decided influence upon the condition of incipient or indolent areas outside the seat of operation. This is difficult to explain, but it is probable that the ulcerating edge, as a breeding place for bacilli, serves as a focus of infection for other parts of the body. In one case a large patch of incipient lupus of the shoulder disappeared spontaneously within a fortnight after the removal of an active ulcerated area upon the face, and in several other instances an almost immediate change for the better in the character of outlying patches has been noticed, while at the same time a decided improvement has been observed in the general condition of the patient.

The advantages of epidermic grafting after the removal of the disease are obvious. The graft surface has a better appearance than that of an ordinary cicatrix, and not only is the process of healing greatly accelerated, but the contraction incident upon it is much reduced. In any case, however, the contraction is much less than might have been expected, but where the lower eyelid is approached by the operation an ectropion is sometimes inevitable. Should this occur the lid may be subsequently freed, drawn up into position, and the gap filled with an epidermic graft with perfect success.<sup>1</sup>

<sup>1</sup> See cases reported by the author in 'Lancet,' 1896, vol. ii.



To sum up, I should advise that every patch of lupus vulgaris be excised if not so large or so located that removal by the knife is inexpedient ; precautions being subsequently taken to guard the patient from recurrence as far as possible by suitable general treatment, and especially by an examination into the sanitary conditions of the house in which the disease was first manifested. In lupus erythematosus, and the erythematous form of lupus vulgaris, linear scarification may be employed and followed by the immediate application of a 5 per cent. solution of carbolic acid and the later use of salicylic ointment (20 or 30 grains to the ounce). In large areas of lupus, especially in the ulcerating stage, excision is sometimes available, but when they are considered unsuitable for this, the spreading edge may be excised in the manner described, the central portion freely scraped, and the whole surface covered with salicylic ointment. The mode of closure of the surgical wound, by suture, by epidermic grafts, or by gliding, will of course be decided by the special conditions of each case.



NOTES  
ON  
SURGICAL BILHARZIOSIS AS SEEN IN  
EGYPT.

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THE original factor in the production of surgical bilharziosis is the presence in the portal venous system of the *Distoma hæmatobium* (Bilharz) and the deposition by the impregnated female of myriads of embryos in various tissues, almost exclusively those whose veins are in direct connection with the portal circulation. It is unnecessary here to give any details as to the life-history or structure of this interesting parasite. Its structure and histology have been lately very fully described by French (Lortet) and German (Looss) anthelmintologists, whereas its life-history from the time the embryo is discharged from its host until the appearance of the fully-developed worm in the portal vein, is quite unknown.

For our present purpose it suffices to state that the worm resembles in size and general appearance the *Oxyuris vermicularis*, and that it is only found in the portal vein or one

of its branches. Its existence in this situation is unattended with any appreciable symptoms, and all treatment intended to destroy it has so far failed.

Unmistakable evidence of its presence is given, however, by the lesions produced at the points of deposition by the female of her embryos. These embryos as met with in the affected tissues or secretions are enclosed in a strong capsule, oval in shape, and measuring approximately one-hundredth of an inch in the longest diameter, and furnished with a sharp spike or spine at its most pointed extremity. These capsules form most unmistakable objects when seen under the microscope ; they are best seen in the sediment from the urine of a patient suffering from bilharzial cystitis, but are also easily recognisable in any tissue in which they have been deposited.

The place chosen by the female is usually one most favorable for the escape from the host of the deposited embryos. Swimming against the current of the portal circulation, she takes up her position in some small venule of the urethra, bladder, or kidney, of the rectum, or of the subcutaneous tissue of the perinæum. She then proceeds to discharge myriads of embryos, which, encased in their hard spiked shells, are able to force their way easily through the walls of the small capillaries into the surrounding tissues. Here they exert a considerable irritation, and rapidly become embedded in fibrous or granulation tissue.

The consecutive changes vary with the tissue in which the deposition takes place. Mucous membrane—as, for instance, that of the bladder—is almost entirely destroyed, its place being taken by a granulation tissue infiltrated with numberless embryos, so much so that in an advanced case it is difficult to find any normal mucous membrane in the whole bladder. The muscular and fibrous tissues which form the walls of hollow viscera and ducts—as, for instance, of the bladder and ureters—undergo enormous thickening due to the deposition of millions of embryos, and at the same time there is an atrophy of the muscular tissue itself. In the subcutaneous tissues, especially that of the perinæum, the embryos are usually deposited in smaller numbers, and the tendency is to the production of a slow inflammatory process, going on to the formation of a slightly purulent serum,



which gradually finds its way through the skin, leaving a fistula lined with granulation tissue containing embryos.

Those lesions of bilharziosis which come under the treatment of the surgeon may be best considered in connection with the regions and organs in which they occur. The seat of election may be considered to be the whole urinary apparatus, and this may be first considered.

The kidneys are often affected, but usually late in the disease, and in many cases the changes are secondary to those in the bladder, and do not depend on the direct deposition of embryos in their tissues. It is, however, by no means rare to find the embryos in the kidney tissue, and especially in the pelvis and commencement of the ureters. The changes produced include all those generally known under the head of surgical kidney, and there is a great tendency to the production of suppuration, of cystic dilatation, and of calculus.

CASE 1.<sup>1</sup>—Fellah youth, suffering from purulent cystitis due to Bilharzia, and complaining of great pain and tenderness in the right kidney region. His general condition indicated great exhaustion, and there was a slight evening rise of temperature. A very evident fluctuating swelling could be felt in the right kidney region; the left kidney could not be felt, neither was there tenderness. A needle introduced into the tumour produced sweet yellow pus. It was decided, considering the exhaustion of the patient, to simply incise the kidney and evacuate the pus. This was effected through a lumbar incision, and some 600 grammes of pus let out; the kidney wall was, however, so moveable that it was decided to extirpate it, and a multilocular cyst the size of two fists was easily brought away after ligature of the ureter and of the kidney vessels. The cavity left was plugged with dermatol gauze. The boy lived, however, only about a fortnight after the operation, and died of exhaustion, the urine, although sufficient in quantity, still containing pus.

On post-mortem examination pyelitis to a limited extent

<sup>1</sup> In all records of Egyptian patients it is useless to attempt to give either the age of the patient or the duration of the disease. They have absolutely no idea of the lapse of time.

was found in the other kidney, and both ureters as well as the bladder were infiltrated with *Bilharzia* embryos. *Bilharzia* worms were found in the portal vein.

In addition to these large collections of pus in the pelvis of the kidneys, it is not uncommon to find small miliary abscesses in the kidney substance itself. These are, however, only detected post mortem.

Kidney stones are very common in *Bilharzia* cases, but it is a remarkable fact that the native very rarely applies for treatment for this condition. The native certainly submits to an immensity of pain before he seeks relief, and bilharziosis, although occurring in the better classes, is essentially a disease of the poor agricultural labourer, who is hardened to most sufferings. Still, I am convinced, from my large acquaintance with natives both in and out of hospital, that kidney colic is very rare; and I think this may be explained by the fact that the stone formation is secondary to serious inflammatory mischief, which has gradually rendered the kidney, ureters, and bladder more tolerant of irritation. At any rate, I have only had occasion to remove three stones from the kidneys of natives, and in each case *Bilharzia* embryos were found in the urine. The stones are, on the other hand, frequently discovered post mortem.

CASE 2.—Adult Fellah suffering from calculus in the urethra. This was removed by incision, and was the size of a date; a probe passed through the incision into the bladder detected another stone, and a lateral perinæal cystotomy permitted the removal of two calculi, one a little larger and the other smaller than the urethral stone. The patient died a few days later.

On post-mortem examination pus was found in both kidneys, in the right kidney one stone, in the left kidney several, in the right ureter two stones, in the left ureter one. Both ureters and the bladder were much thickened, owing to the deposit of *Bilharzia* embryos.

The ureters are often deeply affected as above described, but in these cases also the symptoms are not sufficient to lead to identification. Not unfrequently, however, a stone becomes arrested just at the opening into the bladder, and

may be detected in this position by a vesical sound, and may be removed either by lithotrity or lithotomy.

The bladder is the earliest and most generally affected of all the viscera, and it is by symptoms starting from it that the existence of bilharziosis is usually detected. The earliest symptoms are slight uneasiness about the perinæum and the prostatic region, a slight increase in the frequency of micturition, and the presence of a small quantity of blood and mucus in the urine. Of these symptoms the hæmaturia is the most general, and many cases come complaining of this only; but with the more educated native at all events it can generally be established that the other symptoms existed before the bleeding. In some cases bleeding is absent for a long period, and in many is so slight as to be only detected on close examination. Frequently it takes the form of tiny blood-stained flocculi of mucus expelled with the last few drops of urine. In some cases of vesical irritation, especially those in which hæmorrhage is absent, the embryos are discharged in very small numbers, and can only be detected by carefully depositing, or, better still, centrifugalising the urine. The condition of slight cystitis and hæmaturia may continue for a long period, and may in some cases constitute the whole symptomatic course of the disease, and I know of a case in which it has existed certainly more than ten years. The duration of the vesical disease as evidenced by the symptoms and the discharge of ova does not, of course, depend on the length of life of the parasite. In the first place, re-infection of the individual by new parasites may be constantly occurring so long as he remains in an infected country; and in the second place, the discharge of living embryos with the urine does not indicate necessarily the existence of a living parasite, as the reserve store of embryos which exist in the bladder walls, and which may have been deposited, as far as we know, years previously, is practically inexhaustible. Usually, however, there is a gradual increase of all symptoms or a predominance of one.

CASE 3.—Nubian adult, complaining of intense pain at the end of his penis and at the base of the bladder, with frequency of micturition, and relief of the pain during and

after passage of urine. The urine contained a little mucus and a little blood, and a fair number of embryos. The most careful examination with and without chloroform failed to detect any ulceration or tender spot or any calculus. Cystotomy both as an exploratory and curative measure was proposed and refused. Methylene blue by the mouth gave some relief, and I finally lost sight of him.

CASE 4.—A middle-aged Greek, who had been in the provinces many years, was brought by his doctor, who had treated him for a long time for bilharzial cystitis with much hæmorrhage. The patient, in addition to constant bleeding, suffered one or two attacks every year of severe hæmorrhage, which on more than one occasion had produced obstruction due to clots, relieved only by washing out the masses of coagulum with a lithotripsy evacuator. Bilharzia embryos existed in large numbers in his urine. He submitted himself readily to cystotomy, the more so as he was informed of the possibility of the existence of a tumour. A perinæal cystotomy was performed, and the bladder thoroughly explored with the finger. No tumour being found, a drainage-tube was inserted, and an irrigation of 5 per cent. creolin solution given. During the operation no blood was lost, but three days later I was suddenly called to find a severe hæmorrhage from the bladder, which was stopped after some difficulty by irrigations of iced creolin. Some fourteen days later the tube was removed, and the wound rapidly closed. Since then (1893) there has been, as far as I know, no return of the severe bleeding.

The two preceding cases are, however, somewhat exceptional; and Cases 5, 6, and 7, given on account of the diversity of treatment and of result, may be looked on as more typical. The treatment of bilharzial cystitis is to a certain extent unsatisfactory. Very great amelioration is frequently produced, but no cure seems to be from the nature of the disease possible. In the earliest cases, and, in fact, in most cases, great relief is given by the exhibition of methylene blue by the mouth in doses of 30 centigrammes. The greater part of this is excreted by the kidneys, and the resultant solution of methylene blue or green in the urine



has a marked anodyne effect. The result is, however, quite evanescent, and after a dozen or so doses of the drug, at intervals of three days, the stomach becomes intolerant of it. Copaiba and the benzoates have but little effect. Irrigation and drainage of the bladder are excellent so long as they are continued, but the relief they give is not permanent. Perinæal incision, with the insertion of a large drainage-tube and thorough irrigation through it during a fortnight or three weeks, gives the most permanent benefit, but has, in my experience, the great drawback of not unfrequently leaving a urinary fistula, which is rendered very often almost incurable by the deposition in its walls of *Bilharzia* embryos. Supra-pubic incision gives less benefit in my experience, and is equally liable to be followed by fistula. I have, therefore, lately drained the bladder by incision much less frequently than formerly, and reserve the operation for cases in which there is a fœtid cystitis, and in which catheterisation has been tried in vain.

Urethral irrigation of the bladder, to be effectual, should be through a large tube and under considerable hydrostatic pressure, the column of water being as near a metre in height as the patient can bear; the volume of solution introduced should also be as great as possible. The most useful solution I have found to be creolin. I commence with 3 or 4 per thousand, and increase the strength as the bladder becomes more tolerant to 5 per cent. I have tried many other solutions, including nitrate of silver, antipyrin, quinine, lysol, or permanganate of potash, but creolin is, I think, the most effectual, and is at the same time very safe. It is somewhat painful.

CASE 5.—Fellah, middle-aged, has suffered from bilharzial cystitis many years. Complains of pain and frequency of micturition. No lesions are detectable outside the bladder. Urine alkaline, full of mucus, contains pus and blood-cells, and *Bilharzia* embryos. His condition is not sufficiently bad to justify cystotomy. Treatment: irrigation with creolin 6 : 1000 through lithotritty evacuating tube twice daily. Very considerable improvement after some twenty irrigations. Patient discharged, and told to repeat treatment whenever necessary.

CASE 6.—Fellah, middle-aged, suffering from bilharzial cystitis. Urine alkaline and foetid, containing pus, blood, and mucus. Perinæal cystotomy performed, and large drainage-tube inserted, through which the bladder was washed out twice daily for a month with creolin solution. Ten days after the tube was removed the wound healed, and patient left the hospital greatly relieved, passing clear acid urine, free from pus and blood, but containing embryos.

CASE 7.—Fellah, middle-aged, whose condition closely resembled that of Case 6. The same treatment was carried out, but patient left the hospital with a perinæal urinary fistula. He returned to hospital some months later, when all efforts to close the fistula remained futile.

In some cases hypertrophy of the bladder walls, with consequent contraction and diminution of the capacity of the viscus, constitutes the principal lesion. In such cases the patient's condition is most pitiable, the almost constant urination and the continuous pain bringing him to a state of exhaustion, which he has probably learnt to alleviate by ever-increasing doses of opium.

A certain amount of relief may be given by the constantly repeated hydrostatic dilatation of the bladder. This is only likely to be effectual if the patient learn to do it for himself, and certainly the simplest and best method for him is injection of the bladder through the urethra without any instrumental introduction. The best liquid is a sterile artificial serum. The column of water may be at first one metre high, but may or must be gradually increased until the quantity of liquid introduced is as great as the patient can possibly bear. All forcible dilatation of the bladder under chloroform is, I think, dangerous.

In some cases the masses formed by the *Bilharzia* infiltration is so great that on incising the bladder it is scarcely possible to introduce a finger, and one might easily imagine that the condition was one of malignant tumour of the bladder; but, as far as I know, the co-existence of bilharzial and malignant growth in the bladder has not been determined by any trustworthy pathologist.

One of the most frequent complications of bilharzial cystitis is the presence of stone in some portion of the urinary apparatus,—in fact, the great prevalence of stone in Egypt is probably due to this cause. In almost every case of vesical calculus in which I have had the urine examined, bilharzial embryos have been found. On the other hand, Professor Rüffer, who kindly examined for me the fragments of three vesical calculi recently removed by operation from bladders affected by bilharziosis, failed to find therein any embryos.

After the bladder, the urethra is, perhaps, the most frequently affected organ.

The patient generally presents himself to the surgeon suffering from one or more urethral urinary fistulæ. There is never any general urethritis, but simply a deposition of embryos at one or more spots in the submucous tissue, with subsequent irritation and inflammation leading to the formation of abscess or fistula, the latter rapidly extending until it opens both in the urethra and externally. This formation of fistula is never complicated, as far as I have seen, with any urinary infiltration of the surrounding tissue, the reason being that there is usually no stricture of the urethra and no obstruction to the flow of urine in the early stages of the condition. In most patients presenting a single fistula a large sound can easily be passed along the urethra into the bladder. In the later stages, however, when the fistulæ are always multiple, there is very considerable kinking and constriction at each point of infiltration. I have seen hundreds of cases in which there were ten or more fistulæ, and at each fistula the urethra and the surrounding penile structures took a turn in a new direction. In such cases there are usually one or two deep-seated perinæal fistulæ through which nearly all the urine passes, the remaining fistulæ simply giving passage to a drop or two, a similar quantity oozing from the meatus. It may be imagined that no introduction of a bougie is feasible under such conditions, and even if all the fistulæ are incised it is impossible to trace any definite urethral track.

Any surgical treatment with the view of re-establishing a urethral canal is hopeless. The routine treatment is to

excise all such large deposits of *Bilharzia* as cause considerable pain and inflammation, and drain the bladder through a perinæal incision which the patient is instructed to keep open by the repeated passage of a bougie.

In the earlier cases, however, much can be done, especially when the fistula is single, or when there are but two or at most three.

The treatment consists in excision of the fistula and resection of the affected portions of the urethra, with suture of the adjacent ends.

CASE 8.—Fellah youth, suffering from bilharziosis of the bladder and one bilharzial fistula, situated just behind the scrotum, through which all urine passed. There were in addition several deposits in the perinæum around the urinary fistula, but there were no other deposits detectable in the urethra.

*Treatment.*—A large catheter was easily passed into the bladder, and that viscus washed out with creolin. All the *Bilharzia* fistulæ were laid open and their walls carefully excised. About one and a half centimetres of the urethra was dissected away, and the divided ends of the urethra united with fine silk sutures. Owing to the number of incisions in the perinæum and the removal of infiltrated tissues it was impossible to entirely close the external wound. The catheter was tied in and the wounds plugged with dermatol gauze. Some four days after the operation urine began to pass from the wound. The catheter was withdrawn, and for the next three weeks a gum-elastic catheter was passed every four or six hours, and at the end of that time the wound had entirely closed. The patient left the hospital passing all his urine freely by the penis.

I have carried out this treatment very frequently, and should say that at least two thirds of the cases have left the hospital free from fistula.

I have on two occasions seen bilharzial urinary fistulæ situated above the pubes, but the condition is, I think, very uncommon. Both cases were treated by excision of the fistula; the one healed and the other did not.

Cases of urinary fistulæ depending upon bilharzia are so



common that I could easily at any time fill 150 beds with them. The result of treatment in the advanced cases is, however, so unsatisfactory, that the entry of such patients into hospital is discouraged.

Outside the urinary apparatus the deposit of *Bilharzia* embryos is less common; still many cases present themselves for treatment with lesions of the rectum and of the perinæum due to this cause.

The rectum is a fairly common seat of deposition. There is not, however, the same tendency to great thickening as in the bladder; the lesions are usually more superficial, being situated almost entirely in the mucous membrane or in the submucous tissue. The usual lesion produced is either a villous velvety condition, which may be considered as primary, or an ulcer, which is, I think, secondary. The symptoms produced are those of proctitis, slight or severe according to the extent of the ulceration. There is frequently a discharge of blood with the motions, although this is not so much the rule as in the bladder affection. The patient's symptoms—diarrhœa, straining, pain, and the discharge of bloody mucus—very often lead to the erroneous diagnosis of dysentery, but a digital rectal examination, together with a microscopical examination of the stools, usually clears up all doubt.

Another remarkable condition of the rectum is the formation of polypi. These are fairly common, especially in young adults the subjects of bilharziosis. In all I have seen, some ten or twelve cases, the polypi have been multiple, usually arranged in one or more rings round the rectum, and situated almost as high up as the finger can reach. They have usually a flat broad pedicle, and bleed freely when touched.

On microscopical examination they are found to be infiltrated, chiefly towards their free extremity, with embryos. In the first instance they are probably localised deposits of embryos with hyperplasia, and acquire their polypoid form partly by growth, but also to a large extent from the expulsive efforts of the rectum.

In the earlier stages of this condition palliative treatment produces great alleviation. The symptoms cease almost

entirely if the rectum is well washed out every morning with two injections, the first an ordinary soap and water enema to remove all fæcal matter; the second a bulky solution of some astringent, the best being, I think, a decoction of oak bark. The severer forms, especially where polypi exist, call for operative interference.

CASE 9.—Fellah youth, suffering for some years from bilharziosis of the bladder. For the last year has had constant diarrhœa and straining, entirely unrelieved by various treatments. The stools are small, highly charged with mucus, and nearly always containing blood. He has often passed as many as twenty in the day. There is no abdominal colic whatever. On digital examination of the rectum, multiple polypi were easily detectable, and the case was diagnosed as bilharziosis of the rectum, a diagnosis established by subsequent microscopical examination of the fæces. Operation having been accepted, the patient was chloroformed, and the rectum dilated until the operator's small left hand could be introduced. It was found that all the polypi could be brought into sight, but the point of attachment of some was so high as to render excision of the affected portion of the rectum a matter of risk. Each polypus was therefore seized and removed with the red-hot knife; all softened patches of mucous membrane were thoroughly scraped out. The operation was long and tedious, but very little blood was lost. The immediate result of the operation was most excellent, but I have not seen the patient since, and ignore his present condition.

Another very common seat of deposition is in the subcutaneous tissue of the perinæum, and in the connective tissue of the ischio-rectal fossa.

At first sight the patient appears to be suffering from fistula in ano, and in many cases it is only on considering the history of the disease, and on examining the urine and the discharge from the fistulæ, that the real nature of the case is arrived at. The characteristic points are that the fistulæ very rarely if ever open into the rectum; that they are often situated at a considerable distance from the ischio-rectal fossa, and often invade the scrotum; that they

often are multiple, and without any communication the one with the other; and finally that they form gradually with scarcely any inflammatory symptoms.

The commencement of the process is, as elsewhere, the deposition of embryos in the subcutaneous tissues, followed by infiltration and gradual destruction of the superjacent tissue,—in this case skin. There is the formation of a small quantity of thin yellowish serum, which eventually discharges through an opening, while the fistula gradually expands itself subcutaneously. There is but very seldom any real inflammation except when secondary septic infection takes place.

These fistulæ are often of enormous extent, and are usually many in number. The following may be taken as a type of a severe case.

CASE 10.—Egyptian Bey who had suffered from bilharziosis of the bladder many years. For the last eighteen months he had in addition suffered from the formation of fistulæ around the anus. He was seen by a doctor when he had but one fistula, but he refused the recommended operation. He was seen by me some four months later, when he had many fistulæ—at least six. He again refused operation. A year later, when the fistulæ had increased in number to over a dozen, he consented. At this time he was one of the worst perinæal cases I ever saw. The whole perinæum was a brawny mass, in which it was very difficult to distinguish the rectum from the many fistulous openings. The fistulæ extended into the gluteal region on either side, they ran along the folds of the thigh up to the pubic arch, and there was one situated immediately over the right spermatic cord as it entered the scrotum. The patient suffered from chronic bronchitis, smoked some fifty to sixty cigarettes a day, drank his regular two bottles of cognac, and took opium by the pellet.

The condition of his perinæum after operation was even more appalling than before. There must have been something between four and five feet in length of incision, the whole of which had to be scraped out, and much of it cauterised. However, much feeding, moral control, morphia,

and good nursing pulled him through the deprivation of his tobacco, alcohol, and opium, and in ten days all his wounds were cicatrising. I should have stated that none of the fistulæ communicated with the rectum. A month later most of his wounds were healed, but new fistulæ were already forming which required incision, and it is an open question whether the energy of the parasite or surgical perseverance will eventually win the day.

In the foregoing observations I have referred to the principal lesions due to bilharziosis, and more or less amenable to surgical treatment. There are, however, a few situations in which the embryos are found occasionally, such as the vesiculæ seminales, the spermatic cord, and the vagina in the female, which have not come under my clinical notice. Moreover, in one exceptional case described by Mackie of Alexandria, the embryos were found in all parts of the body and in almost every tissue.

After what has preceded it is hardly necessary to point out the deplorable insufficiency of our present methods of treating bilharziosis either in its medical or its surgical aspects.

So long as the life-history of the parasite outside the human body is unknown, it is useless to attempt to determine the measures necessary for the destruction of the source of infection; and so long as the worm is left in security within the portal vein, surgical interference with the lesions it gives rise to can be nothing but tinkering.



ON SOME CLINICAL ASPECTS  
OF  
TUBAL GESTATION IN THE EARLY  
MONTHS;

BASED ON AN ANALYSIS OF TWENTY-SIX  
CASES.

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THE object of this paper is to show the relative importance of the numerous symptoms which are met with in cases of tubal gestation, and also the very different aspects which these cases present according to the condition of the tube. It is this variety in the symptoms which is so misleading, and makes the correct diagnosis often a matter of difficulty. In seventeen of the twenty-six cases which serve to illustrate this paper the diagnosis was confirmed by abdominal section; in the remaining nine cases, although no operation was found necessary, the symptoms and physical signs were so definite as to leave little doubt as to the nature of the case. Cases of tubal gestation are occasionally seen before rupture, or before any hæmorrhage has taken place around the ovum. Unfortunately symptoms at this period of the gestation are, as a rule, either absent, or not of sufficient gravity to suggest to the patient the necessity for medical advice. In a few

cases (two out of the twenty-six cases in the present series) the subject of tubal gestation may first be seen at the time of rupture, or within twenty-four hours or so afterwards. In far the larger proportion of cases rupture does not occur at all, but hæmorrhage takes place between the ovum and the tube wall, accompanied also by escape of the blood through the patent fimbriated end of the tube. Where the ovum is discharged from the tube with the blood the condition is spoken of as a complete tubal abortion. In these complete cases, although the symptoms at the time of the hæmorrhage may be very grave, the patients very often recover without any operative interference, and are not liable to recurrent hæmorrhages. In other cases the hæmorrhage occurs as before through the patent fimbriated end of the Fallopian tube, but the ovum remains within the tube. The retention of the ovum within the tube is a source of danger to the patient, as these are the cases in which further attacks of hæmorrhage may occur, causing more or less serious symptoms and a continuance of pain.

The knowledge gained from surgical interference in cases of pelvic hæmatocele has shown that the one important condition which leads to the formation of intra-peritoneal hæmatocele is gestation in the Fallopian tube. Other causes, such as rupture of varicose veins in the broad ligament, or regurgitation of blood from the uterus, though they may have some theoretical value, have not been demonstrated by any facts which will bear criticism. So far as regurgitation of menstrual blood is concerned, anyone who has endeavoured to squeeze the contents of a Fallopian tube distended with blood or serum through the cut uterine end after its removal would be convinced that the pressure within the uterus is quite insufficient to force blood from the uterine cavity along the Fallopian tube where the cervical canal is patent. The cervical canal in these cases is always the path of least resistance.

As regards the ætiology of tubal gestation, it has been said that a pre-existing salpingitis predisposes to this abnormal form of gestation. It is supposed that in inflammation of the tube the epithelial lining may be so damaged that the passage of the ovum along it does not take place, and in consequence the gestation sac is formed in the tube.

Out of the seventeen cases in which abdominal section was performed, in two only was there evidence of chronic salpingitis. In one the salpingitis was unilateral, the gestation being present on the same side; and in the other case there was very marked chronic salpingitis on both sides, with a gestation sac also on one side. It is evident, then, that although salpingitis is occasionally an antecedent in these cases, it cannot be considered important as an ætiological factor. It is also stated that the subjects of tubal gestation are either sterile, or else there has been a long period of sterility since the birth of the last child. On referring to this point I find that in six of the cases the exact date of the last child is not mentioned, though I may add that none of the patients were sterile. Of the remaining twenty cases—

In 6 the last child was born less than 2 years previously.

„ 2	„	„	„	3	„
„ 2	„	„	„	4	„
„ 6	„	„	„	5	„
„ 2	„	„	„	7	„

and in the remaining two the tubal pregnancy was the first pregnancy that had occurred after the patients had been married six months and three years respectively. These figures show that any long period of sterility is certainly not the rule in cases of tubal gestation.

The first thing that strikes one when observing the symptoms of this interesting disease is their curious variety. The importance of arriving at a correct diagnosis hardly needs to be mentioned, and yet these cases are not infrequently mistaken for other conditions; either they are regarded as cases of simple abortion owing to the blood-stained discharge from the uterus being rather excessive, or the sudden onset of abdominal pain and its severity suggests the diagnosis of pelvic peritonitis. I will here give a short account of a case which came to the out-patient department of the hospital a short time ago, in which the history was characteristic. Such a history, even before any physical examination has been made, should at once suggest the probability of the case proving to be one of tubal gestation, followed by escape of the ovum through the open end of the tube with formation of pelvic hæmatocele.

“A. H—, æt. 34, married, had had six children, the last eight years ago. She was quite regular from the birth of the last child till sixteen weeks ago, when she had the last normal period. This was followed by a period of amenorrhœa for ten weeks, after which she began to lose. This discharge of blood continued for six weeks, up to the time of her visit to the hospital. The day before the hæmorrhage began she had bearing-down pain, which continued very severe up till two days ago. She had been in bed on and off all through the six weeks, and on three different occasions had felt extremely ill and faint.” The pain and persistent hæmorrhage coming on after a period of amenorrhœa at once made one suspect the presence of pelvic hæmatocele secondary to tubal abortion, and this proved to be the case. The condition had, however, been thought to be one of ordinary miscarriage. It is never wise to take a patient’s word that abortion has occurred, unless she has definitely seen a formed fœtus in the discharge. In all cases of doubt an examination should be made, when the actual condition present can be determined.

One of the first questions that should be put to a patient who is suddenly seized with acute pain in the lower part of the abdomen, apparently of pelvic origin, is the date of the last menstrual period. This, as a rule, is a most important aid to a correct diagnosis, and should never be omitted. It is not, however, an invariable rule to find a period of amenorrhœa or delayed menstruation. One has to remember the possibility of cases of tubal gestation terminating sometimes in the early weeks owing to hæmorrhage occurring around the ovum, and in such cases there may be complete absence of any period of amenorrhœa.

In the series of cases which form the basis of this paper, a period of amenorrhœa was present in such a large proportion that it is evident that this is a symptom of very great value. It is necessary to add, however, that the value of amenorrhœa entirely depends upon whether the patient is as a rule regular. When the patient is able to time the commencement of her period to the day, a delay of a few days or a week is sufficient ground for a suspicion of pregnancy.

The first onset of symptoms occurred—



In 1 case three days after a period was expected.

„ 3 cases one week „ „ „

„ 5 „ two weeks „ „ „

„ 3 „ three weeks „ „ „

„ 2 „ four weeks „ „ „

In fourteen cases, therefore, out of the twenty-six there was a definite period of amenorrhœa. In six out of the remaining twelve the symptoms commenced at or dated from a period; in one case (where the patient had advanced to the third month of gestation) the patient had had a regular period one month before her admission, and the first symptom began a week later; in another case the patient had not menstruated since the birth of her last child, fifteen months before; and in the remaining four cases the date of the last menstruation is not recorded. The actual proportion of cases in which a period of amenorrhœa was present amongst those in which the fact was recorded is fourteen out of twenty-one, or two thirds of the cases.

So far as the signs in the breasts are concerned, in only two cases out of the series were there any changes sufficiently marked to be of any practical value.

The first symptom which usually arouses the patient's attention is the sudden onset of severe pain, often agonising. This pain is usually followed after a short interval by a blood-stained discharge from the uterus, which is very characteristic, and persists for an indefinite time. Coming to actual figures, one finds that in eighteen out of the total number the presence of the abnormal form of gestation was first made evident by the sudden attack of acute pain. This pain is in some cases due to the escape of blood into the peritoneal cavity through the fimbriated end of the tube, in others it is due to sudden rupture of the tube wall, and in others the earlier pains may be due to distension of the wall of the tube, owing to the occurrence of hæmorrhage between the ovum and the wall. The pain at the time of onset varies much in severity according to the nature of the case. Where rupture takes place, and where the amount of blood poured out into the pelvis is very great, the pain is usually very severe and agonising. The pain is nearly always unilateral, and referred to an area just above one or

other of Poupart's ligaments. In some cases after the subsidence of the first severe attack the patient may have recurrent attacks from time to time ; in other cases the pain at first is less severe, but the succeeding attacks increase in severity, and may be accompanied by faintness. The explanation of these symptoms is that hæmorrhage at first occurs round the ovum, leading to death of the ovum ; a tubal mole is formed, the Fallopian tube being distended with blood-clot. The presence of this body in the tube is the cause of the recurrent attacks of hæmorrhage which may occur through the fimbriated end of the tube, each attack being ushered in by the onset of pain ; and if the discharge of blood is copious and somewhat sudden, faintness may also be an alarming symptom.

Though the situation of the pain is nearly always that described above, cases do occasionally happen where the pain is referred to a point above the level of the umbilicus. In one case of the series, where the gestation ended in a tubal abortion at about the third week of pregnancy, the patient was suddenly seized with very severe pain in the upper part of the abdomen between the umbilicus and the right costal margin. The pain was followed by faintness and vomiting, and for two years previous to this attack the patient had suffered from indigestion. At first sight the history was not unlike one of perforating ulcer of the stomach. On further inquiry, however, the patient was found to be a month beyond her proper time for a period, and on vaginal examination the uterus was found pushed over to the left side by a soft indistinct swelling which occupied the right posterior quarter of the pelvis.

Vomiting is not usually severe, and not by any means a constant symptom. It was present in only seven of the cases, and in only one was it so violent and persistent as to make one suspect the presence of some ulceration of the stomach.

It is only rarely that one has the opportunity of confirming the diagnosis of tubal gestation by evidence of the discharge of a decidual cast of the uterus. Where it is observed, it should at once suggest the correct diagnosis in any doubtful case. Its absence, however, does not make

the diagnosis less probable where characteristic symptoms are present.

One has to be careful in inquiring about attacks of faintness, or sensations of a similar kind, to get definite information whether the patient merely felt faint owing to the severity of the attacks of pain, or whether she was actually faint, and the pallor was noticed by her friends. Faintness does not by any means always occur at the commencement of the pain. In those grave cases where sudden rupture of the tube takes place, or where an excessive quantity of blood is poured out into the pelvis, the patient becomes absolutely blanched, and unconsciousness quickly supervenes. All cases of tubal gestation do not, fortunately, present these alarming symptoms. More commonly blood escapes through the patent fimbriated end of the tube in a gradual trickle, which is accompanied by pain. From time to time this discharge may increase in amount and be more sudden, in consequence of which the pain is more marked and the patient feels faint. Where the hæmorrhage is comparatively small in amount, and its escape gradual, the blood may be shut in by adhesive peritonitis around the appendages of one or other side, and a unilateral swelling is the result. Where, however, the hæmorrhage is more extensive the blood gravitates into the pelvis, filling Douglas's pouch and the space behind the uterus and broad ligaments, and forms a tense elastic swelling, reaching upwards for a variable distance towards the umbilicus, and pushing the uterus forwards and upwards behind the symphysis pubis.

It only rarely falls to the lot of a surgeon to see a case of tubal gestation at the time of rupture or immediately after. The following case which was under my care at St. Thomas's Hospital was very striking, and showed how nearly fatal such an accident may be even where it occurs in the early weeks of gestation.

"M. C—, æt. 35, admitted 21st March, 1894. Married at thirty. Had one miscarriage three months after marriage. The periods then recommenced, and continued quite regularly up till a month before her admission. At this time she had a sudden attack of severe pain in the lower part of her abdomen on the right side, which was shortly followed by

the discharge of dark blood *per vaginam*. This discharge continued with intermittent pains up to the time of her admission. On examination the left vaginal fornix was depressed by a swelling the size of the closed fist, apparently situate between the layers of the broad ligament. The uterus was a little retroverted. The patient was kept quiet in bed, and it was arranged to examine her under an anæsthetic, as the examination without was difficult, owing to the great amount of tenderness. The swelling on the left side was diagnosed as a pelvic hæmatoma, due probably to rupture of a pregnant tube between the layers of the broad ligament; this, however, did not explain the severe pain which the patient experienced on the right side. At 10 p.m. on the 26th March the patient was suddenly seized with severe agonising pain in the right ovarian region. She became suddenly collapsed and pulseless. The sister of the ward thought she was dead. She rallied after a short time, and as her friends could not be communicated with, it was decided to keep her under morphia during the night. It was evident that the symptoms were due to a large escape of blood into the peritoneal cavity, and it was decided to open the abdomen the next day. At the operation about forty ounces of fluid blood were removed with a small fœtus, which had escaped by rupture of the right Fallopian tube. The swelling on the left side was a hæmatoma of the left broad ligament, which gradually diminished in size after the operation."

When describing the usual mode of onset of symptoms, it was stated that in eighteen out of the twenty-six cases the first serious symptom was pain. In the remaining eight cases hæmorrhage was the earliest sign that suggested to the patient that there was something amiss. This discharge of blood was followed by pain in all except two cases, in which pain was entirely absent. It is important to recognise the character of this hæmorrhagic discharge. It may, as I have stated, be the earliest sign of tubal pregnancy, but much more commonly follows within twenty-four hours or so after the attack of pain. Occasionally it may be present for three or even four weeks before the attack of severe pain. In a few cases the hæmorrhage is very free, consisting of liquid



and clotted blood, and it is these cases which are not uncommonly mistaken for ordinary abortions. As a rule, however, the hæmorrhage about corresponds in amount to that lost at an ordinary catamenial period; it is dark fluid blood, without much tendency to clotting, and is extremely persistent. It is not unusual to find that the discharge has been going on for some few weeks continuously before the patient is first seen, and it may continue for a very variable time after her admission to the hospital. This continuous dark blood-stained discharge is most characteristic, so much so that the ward sister is sometimes able to tell the nature of the case from the appearance of the discharge. In not a single case out of the twenty-six was it absent, and the sign is of so much importance that one should hesitate to diagnose a case as one of tubal gestation where this sign is absent.

It may be noticed that I have not discussed nor have I entered into the diagnostic signs of tubal pregnancy before rupture. It does not appear to me that there are any characteristic symptoms until some secondary change has taken place within the wall of the tube, leading to extravasation of blood between the ovum and the tube wall, hæmorrhage into the peritoneal cavity, or rupture of the tube. In the event of any of these changes supervening, pain is caused by the distension of the walls of the gestation sac; and this, if it becomes severe, causes the patient to seek advice. I think the best proof that there are no very definite signs is shown by the rarity with which cases of tubal gestation are operated upon prior to rupture or to formation of tubal mole, whereas operations for the removal of ruptured tubes or tubal moles are of comparative frequency.

To sum up the important symptoms, we find first of all a history of missed menstruation in sixty-six per cent. of the cases. Next there is a sudden attack of severe pain, followed by more or less intermittent pain, increasing in severity from time to time. Thirdly, it usually happens that the attack of pain is followed in a short time by a discharge of dark-coloured blood *per vaginam*. These are the three most important and most constant symptoms, and where they are all present the diagnosis can usually be arrived at without

any great difficulty. Sometimes, however, the symptoms may be more obscure, and it is important in these cases to pay careful attention to the points mentioned above, and to see whether the results of the bimanual examination confirm the conclusion arrived at by the careful consideration of the history of the case.

I wish to express my best thanks to Dr. Cullingworth for kindly allowing me to make use of the reports of his cases for the purpose of this paper.

# CLEFT PALATE.

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BY H. H. CLUTTON,

SURGEON TO THE HOSPITAL.

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It has occurred to me that a review of all the cases of cleft palate upon which I have operated and have notes might be of interest. Practice during the fifteen years over which these cases are spread has altered very considerably in many particulars. The main features of the operation have remained the same, but the details have been modified more or less by different surgeons with the hope of obtaining a larger degree of success, and with the expectation of operating at an earlier age than was formerly the custom.

This expectation has, I think, been realised, for we now think much less about the age of the patient than the condition of the palate. If the edges can be brought together by free lateral incisions, age alone would be no bar to operation. It is now rare for the edges to break away unless diphtheria or scarlet fever should accidentally be contracted. This is in part due to the nature of the material used for suturing, as no one should now use silk in the mouth if it is to be retained long enough for sound union of the edges. However aseptic it may be to start with, it cannot long remain so. Wire, horsehair, or silkworm gut can be allowed to remain indefinitely. In former days silk was always used, and had often to be removed before the bond of union was sufficiently firm to resist coughing, &c.

*The operation* itself has also been much simplified.

Langenbeck's method is the one employed for almost all the cases except the simplest and smallest clefts of the soft palate, which form a very small proportion of the cases submitted to operation. Even when the necessity for raising a muco-periosteal flap on each side does not appear to be absolutely necessary, it is, as a rule, the best way of ensuring complete rest and freedom from tension. Through the lateral incisions, which are made as close to the teeth as possible, the tensor palati can be divided at its insertion on each side, after the palate has been raised with an elevator, by a pair of scissors introduced through the incision. The levator palati is also divided by the lateral incision being carried back through the soft palate. This may even be prolonged still further backwards round the last molar tooth into the cheek. If this is done there is no longer any necessity for dividing these muscles at the hamular process, according to Ferguson's method. The pillars of the fauces, both anterior and posterior, should also be divided with scissors on both sides, and as low down as possible, after the cleft has been closed. It not only relieves tension, but also allows the palate to be drawn up to a higher level. This is an immense advantage for the improvement of the voice. As Francis Mason pointed out in arguing for this final step in the operation, a cleft palate is always too short from before backwards. It consequently fails to reach the posterior wall of the pharynx after it has been united by operation, and is held down like a curtain over the epiglottis by the pillars of the fauces. I have never seen any sloughing occur as a result of these free incisions, even when the lateral incisions have been carried right round the molar teeth into the cheek, and the pillars also freely divided.

The edges of the cleft should in my opinion always be pared, and this should be the first step in the operation before the field of vision is obscured by blood. It has, I know, been stated that when the tissues are scanty the removal of even this little amount may prevent the edges from coming as closely together as they should do without tension. But if the edges be not removed they have to be turned down towards the mouth to ensure the contact of raw surfaces; and this



takes up as much material as if they were removed, and leaves the operator in doubt whether he has secured accurate coaptation of parts that will really unite.

I have said nothing as to an operation in two stages, namely, the first to close the soft palate, and the second at a later date to complete the operation by the closure of the hard. I have never done it, and see no particular advantage in thus subdividing the operation. If the child or baby is strong enough for the complete operation, it is far easier to obtain success by closing the whole cleft at once. If the child is not in good condition, it is better in my opinion to postpone the operation altogether to a later period. Mr. Davies-Colley's operation I have only had the opportunity of doing once since he published his description in 1890. It is a most excellent treatment for cases which are too extensive for the ordinary operation.

*Sutures.*—I have quite given up the use of *silk* for reasons already given. It will be seen by a glance at the table of cases that I used silk sutures from 1882 to 1887. Ulceration and suppuration of the suture-tracks were quite common, necessitating the removal of the sutures at a time when the surgeon was really anxious to retain them *in situ*.

*Wire*, which had already been recommended by Sir Thomas Smith, and for which he had invented a special needle, was next tried, and the improvement in the condition of the suture holes was most marked. Wire sutures can be retained for almost any length of time. In one instance (Case 28) they were not removed till the thirty-ninth day, as the patient—a girl of fifteen—developed scarlet fever, and I was doubtful whether the bond of union would hold. During convalescence the palate appeared so free from any irritation that I allowed them to remain till she was ready to go home. Wire has, however, many drawbacks. It is difficult to introduce without Sir T. Smith's special needle, which is rather complicated and liable to get out of order; it also takes time. It would, however, have held its own if horsehair and silkworm gut had not come into general use, and been found as suitable for the palate as for other operations in surgery.

*Catgut* cannot be relied upon to last long enough in all

cases, and therefore cannot be used as the only suture for the palate.

*Horsehair* and *silkworm gut* are, I think, the best materials for the purpose, especially the former if a few of them be coarse and strong. They can be introduced quickly by pushing a loop through one side by an almost straight *nævus* needle, and withdrawing it through the opposite side by a similar needle which has a suitable slot instead of a hole for the thread. FitzGerald of Melbourne has proposed two needles for this purpose, one of which has a slot made for carrying the thread through the palate from before backwards, whilst the other has a slot made in the reverse direction and withdraws the loop from behind forwards. But I have found that the threaded needle for introducing the suture is more reliable and steady for the opposite needle to meet. It is astonishing how quickly the sutures can be suitably placed in position by this method. I have therefore not been induced to use Mr. Arbuthnot Lane's needle-holder, which I should otherwise have felt inclined to try. Horsehair must be tied as in other parts of the body by a double or treble hitch before the final twist to complete the knot; or a second knot must be made on the first. The knot is otherwise liable to slip. The time at which the sutures should be removed is not an unimportant detail. As a general rule horsehair may be left indefinitely, for the suture-tracks rarely, if ever, suppurate. Each case must, of course, be judged on its own merits, but it is sometimes a great advantage to be able to leave them in a fortnight or more.

*Age.*—One of the most important questions now remains for consideration, namely, the age at which the operation should be done. There can, I think, be no doubt that the earlier the cleft is successfully closed, the better will be the result as regards the voice. On the other hand, if the operation be unsuccessful the difficulties in closing the cleft on a subsequent occasion will be increased. This will be partly due perhaps to some loss of tissue, but still more to the fact that the tissues to be dealt with will be cicatricial. It will be seen by a reference to the table of cases at the end of this paper that I have operated once at six months, eleven

months and twelve months respectively, and on three other cases under two years of age. The three cases under twelve months were cases in which the soft palate only or a small portion of the hard as well were cleft, but those between one and two years of age were clefts which involved both hard and soft palate. I believe that a very large proportion of the worst cases of cleft palate can be safely operated on before the second year is completed. The only reason that has prevented me from carrying out my own views is simply that the cases have not been brought to the hospital till the children were much older. The circumstances which have influenced me in deciding whether I would do the operation at this early age or postpone its consideration to a subsequent period are three : (1) The general condition of the child : he or she must not be a wizened attenuated mortal, but one able to stand the shock of an operation. This point, however, is common to all operations in childhood, and need not be dwelt upon here more than in other parts of the body, except in so far that the surgeon should remember that it is an operation of expediency, and not of necessity. (2) The condition of the palate : obviously if the cleft involve the soft palate only, the surgeon would be more willing to undertake the operation. But even if the whole palate be cleft to the incisor teeth the case should not on that account alone be rejected as unsuitable. A high arch with a fair amount of tissue on each side of the cleft is a comparatively easy palate to close, whereas a wide cleft and a flat arch is extremely difficult. Francis Mason explained this many years ago by a diagram, and compared the differ-



ence to that between a Gothic and a Norman arch. When the soft parts are peeled off the high arch they easily meet at a lower level ; whilst in the flat arch the soft parts remain at the same level, and cannot easily be brought together. It

will also be found that in some cases the tissues are very thin and scanty at the junction of the hard and soft palate, a condition which is very unfavorable to a successful operation.

In many cases, however, not only is the arch high, but the tissues at the side where they join the pillars of the fauces are thick and vascular. These are the cases which should always be considered favorable for an early operation.

Mr. Arbuthnot Lane thinks that where the cleft is combined with a harelip the palate should be operated on first, so that the surgeon may have more room for the necessary manipulations. No doubt there would be a great advantage to the operator, but I cannot say that the closed harelip has ever induced me to postpone the operation on the cleft palate. If the operation has been postponed, it has not been put off on account of the difficulty of access to the palate, but on account of the general condition of the child or the insufficiency of the soft tissues around the cleft. I can quite believe that in rare instances it may be a desirable method of procedure, but unless the cleft palate were suitable for a very early operation I doubt if the mother would consent to the necessary delay in closing the harelip,—mothers lay so much stress on the deformity the child presents; the harelip is visible, whilst the cleft palate is not. If the cleft palate, too, happens to be a difficult one to close, and must on that account be postponed for a year or more, the baby is more difficult to feed if the harelip is left open. Therefore, in my opinion, Mr. Lane's proposal is only applicable to a very simple cleft palate which is not commonly associated with a harelip.

It is, however, of great importance to do the operation at the earliest possible time for another reason. Milk and other fluids are liable to return by the nose. A baby has on this account to be fed very slowly, and consequently is often insufficiently nourished. Many little arrangements may be proposed to overcome this difficulty, which will be quite successful in some cases, but in others the difficulty continues in spite of great care and perseverance on the part of those who feed the baby. If, therefore, a baby has a cleft palate which looks favorable for early operation, and yet the general condition forbids such interference, it is always worth



while to admit such a case into hospital, or in private practice to put on a special nurse to see whether the general nutrition and weight of the body cannot be increased, and the obstacle to operation be removed. After a successful operation there is no longer any complaint on this score. Even at a later age than that we are considering the discomfort in eating and drinking may be so considerable as of itself to form an argument in favour of operation apart altogether from the condition of the voice, which it is hoped will be improved. In adult life experience has taught the patient how to overcome this difficulty in a great measure, so that we hear less of this particular inconvenience.

If the operation on the cleft palate has been postponed to the age of five years on account of the inherent difficulty of the case, and it appears to be still unsuitable for Langenbeck's operation, Mr. Davies-Colley's operation should be undertaken. This I think is far better than recommending an artificial palate. Amongst poor people the initial expense may be met by charity, but it is almost impossible for them to pay for repairs and renewals. Consequently the apparatus, however good, is soon discarded. Those who can afford to pay for their own needs find the inconvenience and trouble very great if an attempt is made to keep up an artificial soft palate of rubber. And when the teeth go, suction cannot be employed as in the case of a healthy jaw. I think, therefore, that an operation like Mr. Davies-Colley's, which is intended only for those cleft palates which cannot be closed by Langenbeck's method, produces a more permanent result than any apparatus, however skilfully devised.

This leads me to remark that amongst the cases recorded will be found a good many between the ages of fifteen and thirty, which have yielded most satisfactory results from Langenbeck's operation. Between twenty and thirty years of age the patients have already followed an occupation, and are therefore able to accurately appreciate the advantages that they have gained by the operation. Now in these cases not only were the voices very much improved, but the facial grimaces made in attempting a more distinct articulation entirely disappeared. One case, aged seventeen, operated on in 1883, was seen in June, 1896. He introduced

himself to me without saying what I had originally done for him. He was an intelligent man, and took some pleasure in trying to make me guess the nature of his operation. Most certainly no one would have suspected that he had had a cleft palate. His voice was perfect. His history was this : after a complete fissure of both hard and soft palate had been closed by Langenbeck's operation in 1883, he had been trained for the stage. He had just returned from America when I saw him in 1896, where he had been ever since earning his living as a public singer.

Such a case as this might suggest that if the result be so good after operation at seventeen years of age, there is not much point in urging an early operation. But such a case as the above is decidedly the exception, and not the rule. It is quoted only to show that even when the operation is done so late, a great improvement may be obtained by careful training ; and that it is therefore unwise to refuse operation for cases in young adult life.

*The voice.*—From what has been already stated the reader will gather that an early operation is to be preferred for the sake of the voice. I am quite sure that where the operation has been done before the second year has passed, it will often be found that the voice is quite natural, and is not to be recognised as one with the peculiar intonation belonging to a deficient palate. When the child is five years of age he or she has already learnt to talk for a comparatively long period, and it is sometimes quite distressing to notice what little improvement has been accomplished by the operation. The improvement that is then to be obtained rests too largely with the parents and friends. If they do not take an infinity of trouble, the child at this age of irresponsibility will appear sometimes scarcely to improve at all after the first few months, and it would appear as if one might as well have operated at ten or even later. In fact, I am not sure that at the later age (say ten to fifteen years) more progress is not made, at any rate during the time they remain under the observation of the surgeon. From greater knowledge and experience they are more amenable to criticism. But inasmuch as such cases are extremely difficult to follow in hospital practice, it is perhaps unsafe to generalise from a few cases. On the

other hand, if great trouble is taken in making the child read aloud they do make real and steady progress.

I have had no experience in massage of the palate after operation, but I can quite believe that anyone who can give the necessary time for this rather irksome proceeding would be well rewarded by the result, if it be at the same time combined with careful training of the voice. The case quoted above of a public singer shows how successful such elocutionary training may be.

It will be seen in the table of cases that I have made a few remarks as to the ultimate result in the condition of the voice. They were in all cases seen for a few months, and impressed with the necessity of making great efforts for self-improvement. After this they were very rarely seen again, for reasons which are sufficiently obvious to any one accustomed to hospital work, till I sent for them when writing this paper. That they improved sufficiently to establish the value of the operation was, I think, in all cases demonstrated, but one would like to know how many were really cured of the peculiar intonation so characteristic of a cleft palate. The proportion of cases so successful as to be counted as cures must be very small amongst hospital patients; but, as I have attempted to show, I think they would be much larger if the operation were done more frequently at an earlier age than is at present the custom.

I have had several opportunities of watching the result of operation in patients over twenty years of age. In bad cases, where the patient could not speak without some amount of facial distortion, the improvement in this particular respect was most marked. But as regards the voice the change was not so good. In each case one can safely say that they were more easily understood when the articulation was previously distinctly bad; but the peculiar intonation of a deficient palate was not entirely lost, although they themselves expressed great satisfaction at the result. The improvement in voice appeared to them to be greater than to others who heard them. To enable one really to form a correct opinion as to the improvement in the voice of a patient who has been submitted to operation for cleft palate, it would be necessary to see them some years afterwards. And this I have only

been able to do in about half the total number of cases. The column devoted to remarks is therefore not as complete as I should wish.

In those patients whom I have been able to see at or about the time of the publication of this paper, viz. September, 1897, I have specially noted the presence or absence of the nasal intonation so characteristic of a cleft palate. I have also been careful to note whether a peculiar hissing sound can be detected in reading, for this is a distinct imperfection even when the nasal intonation is absent. The hissing sound to which I allude apparently comes through the nose from the palate being too short, and is quite distinct from a lisp. It appears as if some portion of the expired air which should be modified by mouth and lips for articulation is somewhat forcibly ejected through the nose, because the palate is not long enough to direct the air through the mouth, therefore a certain proportion passes through the nose. In the only two cases of twelve months and under, Nos. 10 and 14, upon whom I have made remarks, it will be noted that the voice is normal, *i. e.* without any noticeable defect. This supports my contention in the earlier part of this paper. I wish it had been possible to see at the present time a larger number of those patients upon whom I operated at a very early age.

*Closing of the palate.*—I have, however, been able to show that a very large proportion of cleft palates may be successfully closed by operation, as this fact is determined at the time or shortly after.

In the following table there are forty-seven cases, of which forty-one were completely successful so far as the healing of the wound is concerned; three, Nos. 22, 25, and 32, were only partially successful, but two of these were not hopeless, and may have subsequently healed, only there is no note to prove the fact. One of them, No. 32, had been previously operated on, with the result that I had to operate on cicatricial tissues. No. 25 I have just seen (September, 1897), and found also only partially successful, for the soft palate had reopened later. One, No. 9, was a complete failure. Two cases died after operation: one, No. 20, from diphtheria, which she contracted on the eighth day, and to



which she succumbed after three weeks' illness ; the other, No. 46, from shock about five hours after operation.

Successful cases	.	.	.	41
Partially successful	.	.	.	3
Complete failure	:	.	.	1
Deaths	.	.	.	2
				—
Total				47

It is interesting to note that two cases, Nos. 18 and 28, developed scarlet fever, but this did not appear to prevent the healing of the wounds.

Table of Cases.

Case.	Year.	Sex.	Age.	Nature of cleft palate.	Operation.	Sutures.	Sutures removed.	Remarks.
1. St. Thomas's Hosp.	1882	F.	13	Cleft of soft and posterior third of hard palate; high arch	June 30.—Langenbeck's mucoperiosteal flaps; pillars of fauces divided	Silk	8th day	Healed throughout by first intention. Sept., 1897.—Good voice. No nasal intonation.
2. St. Thomas's Hosp.	"	F.	9	Same kind of cleft, but broad, flat arch	Nov. 18.—Same, but lateral incisions had to be carried back through soft palate to the cheek; pillars of fauces divided	"	7th to 9th day	Healed as above. Sept., 1897.—Voice quite natural.
3. St. Thomas's Hosp.	1883	M.	17	Complete fissure of both hard and soft palate; high arch	July 11.—Langenbeck's operation; pillars of fauces divided	"	12th day	Healed as above. June 4, 1896.—Returned from America, where he had acted as public singer. Normal voice without any fault.
4. St. Thomas's Hosp.	1884	F.	12	Complete fissure of both hard and soft palate to incisor teeth, of which only left lateral incisor is present	Feb. 7.—Same	"	5th day	Profuse and offensive suppuration. March 8.—Healed throughout. Sept., 1897.—Mentally deficient. Good voice, but I can detect imperfection.
5. St. Thomas's Hosp.	"	F.	13	Cleft of soft palate with portion of hard	Oct. 16.—Same	"	7th day	Healed throughout. Sept., 1897.—Much improved, but voice nasal and imperfect.
6. St. Thomas's Hosp.	"	F.	23	Complete cleft of hard and soft palate	Oct. 18.—Same	"	5th day	Healed throughout. Sept., 1897.—Easily understood and much improved by operation.

7. St. Thomas's Hosp.	1885	M.	15	Very wide and complete cleft of hard and soft palate, but fairly high arch	May 20.—Langenbeck's operation. The right side was quite continuous with nasal cavity; no ridge or margin to indicate separation of nose from mouth; pillars of fauces divided	"	6th day	United in front, but gaps posteriorly. Sept. 5.—Healed throughout. Sept., 1897.—Says he is much improved both in speech and appearance, but I can detect some imperfection.
8. St. Thomas's Hosp.	"	M.	14	Wide cleft of soft and hard palate, with high arch	Aug. 10.—Langenbeck's operation; pillars of fauces also divided	"	16th day	Ulceration round sutures, which cleared up immediately after removal. Palate soundly healed.
9. St. Thomas's Hosp.	1886	M.	12	Cleft of soft with posterior half of hard palate; flat arch, and very short from before backwards	Aug. 14.—Same	"	5th day	Except at the uvula, the whole wound broke open. Failure. Mother refused any further treatment.
10. Victoria Hosp., Chelsea	"	F.	1	Complete cleft of soft palate	Sept. 2.—Simple operation with lateral incisions	"	6th to the 13th day	Healed throughout by first intention. Reported in 'Lancet,' 1887. Sept., 1897.—Voice excellent; quite normal.
11. St. Thomas's Hosp.	"	F.	24	Complete fissure of both soft and hard palate	Oct. 9.—Langenbeck's operation; pillars of fauces also divided	"	11th day	Ditto.
12. Victoria Hosp., Chelsea	1887	M.	11 mos.	Complete cleft of soft palate and a portion of hard	Feb. 10.—Same	"	10th day	Ditto. Reported in 'Lancet,' 1887.
13. Private	"	M.	4	Complete fissure of hard and soft palate; wide and irregular	May 13.—Langenbeck's operation; pillars of fauces divided only on left side	"	7th day	Healed throughout by first intention. Oct., 1897.—Heard from father. His voice quite natural, and he speaks plainly.
14. Victoria Hosp.	"	F.	6 mos.	Cleft of soft palate	Oct. 6.—Langenbeck's operation	Wire	27th day	Small aperture left anteriorly. Sept., 1897.—Mother writes, "No one can detect any defect in voice or speech."

Case.	Year.	Sex.	Age.	Nature of cleft palate.	Operation.	Sutures.	Sutures removed.	Remarks.
15. St. Thomas's Hosp.	1888	F.	27	Almost complete cleft of hard and soft palate, with high, narrow arch	Aug. 14.—Langenbeck's operation; pillars of fauces divided	Silk and wire	Silk 7th day; wire 19th day	Healed throughout by first intention. Oct., 1897.—Heard by letter: "immensely pleased with the result."
16. Victoria Hosp.	"	F.	5	Complete cleft of hard and soft palate	Sept. 19.—Same	Wire	16th day	Healed as above. Sept., 1897.—Excellent voice, but hisses a little; no nasal intonation.
17. Private	"	M.	15	Cleft of soft and posterior part of hard palate, with high arch and undeveloped jaw	Oct. 8.—Same	"	7th day	Ditto. Jan., 1889.—Friends can now understand him when he talks, but still has nasal twang. Heard in 1894: "Talks well; nothing special to be noticed in his voice."
18. St. Thomas's Hosp.	1889	F.	18	Cleft of soft and posterior part of hard palate, with rather high arch	March 27.—Same	"	28th day	Developed scarlet fever 11th day. Palate soundly healed.
19. Private	"	M.	1 $\frac{0}{12}$	Complete fissure of hard and soft palate, with high arch. Right half of palate joined anteriorly to septum, cleft extending into left nostril	Nov. 27.—Langenbeck's operation, with lateral incision in cheek on level with molars; pillars of fauces divided	"	15th day	Healed throughout by first intention. Sept., 1897.—Almost normal voice; no nasal twang, but hisses slightly.
20. Victoria Hosp.	"	F.	1 $\frac{7}{12}$	Complete cleft of hard and soft palate	Oct. 28.—Langenbeck's operation	"	—	Nov. 5.—Patient developed diphtheria. Died Nov. 23. Failure of union.
21. St. Thomas's Hosp.	"	F.	7	Cleft of soft palate	Sept. 15.—Pared edges only; no lateral incisions	"	11th day	Healed by first intention. Nov., 1890, a year after operation, the voice was described as excellent. Sept., 1897.—I think the voice is imperfect.



22. Victoria Hosp.	1890	M.	5	Complete cleft of soft and hard palate. Previously operated upon without success. Tissues cicatrised	May 1.—Langenbeck's operation; pillars of fauces divided	"	29th day	Indefinite roseolous eruption from 5th to 9th day. Refused food. "Partial success."
23. Victoria Hosp.	"	F.	8	Cleft of soft palate	Aug. 18.—Langenbeck's operation	"	21st day	Soundly healed by first intention.
24. Victoria Hosp.	"	M.	5	Cleft of soft palate	Sept. 12.—Same	"	31st day	Healed as above. Sept., 1897.—Heard by letter: "Much improved, but in some words still speaks through nose."
25. St. Thomas's Hosp.	"	F.	2 $\frac{5}{12}$	Cleft of soft and half of hard palate; very little tissue in soft palate	Nov. 1.—Langenbeck's operation; divided pillars of fauces	"	23rd day	Soft palate puckered and shortened, but otherwise good union. Sept., 1897.—Soft palate imperfect; voice bad.
26. Victoria Hosp.	1891	F.	5	Complete cleft of soft and hard palate to alveolar process	May 28.—Langenbeck's operation; divided pillars of fauces	"	11th day	Healed by first intention, except small hole at alveolus.
27. Victoria Hosp.	"	F.	2 $\frac{1}{2}$	Complete cleft of soft and hard palate	July 30.—Same	"	14th day	Healed throughout by first intention.
28. St. Thomas's Hosp.	"	F.	15	Complete very wide cleft of soft and hard palate. (Median harelip, see 'Path. Soc. Trans.,' vol. xliii, p. 52)	Oct. 31.—Same operation; but the lateral incisions had to be carried round molar teeth on to cheeks to provide sufficient mucous membrane; pillars of fauces also divided	"	39th day	Patient developed scarlet fever, but did well. Palate healed by first intention. Sept., 1897.—Heard by letter: "decided improvement in speech."
29. Victoria Hosp.	"	F.	6	Complete cleft of soft palate	Nov. 9.—Langenbeck's operation	"	15th day	Healed throughout by first intention.
30. Victoria Hosp.	1892	F.	7	Complete cleft of soft and hard palate	March 28.—Same; but anterior extremity too rounded to be closed	"	13th day	Healed by first intention, except part left at operation. Sept., 1897.—Easily understood, but hisses and has a nasal twang.

Case.	Year.	Sex.	Age.	Nature of cleft palate.	Operation.	Sutures.	Sutures removed.	Remarks.
31. St. Thomas's Hosp.	1892	F.	4	Cleft of soft palate and a small portion of hard palate	April 30.—Langenbeck's operation; both pillars of fauces divided	Wire and horsehair	13th day	Healed throughout by first intention.
32. Victoria Hosp.	"	M.	1 $\frac{1}{2}$	Cleft of soft palate and part of hard palate	June 6.—Same	Wire	13th day	Partial success. Two holes left, one in the soft and the other in the hard palate. They probably eventually healed, but there is no further note. Sept., 1897.—"Died of scarlet fever in 1893."
33. St. Thomas's Hosp.	"	M.	4	Complete cleft of soft palate and part of hard, with wide separation	Nov. 5.—Langenbeck's operation; lateral incisions carried round molar teeth on to cheeks; pillars of fauces divided	Wire and silkworm gut	13th day	Healed throughout by first intention.
34. St. Thomas's Hosp.	1893	M.	2	Complete and wide cleft of soft and hard palate, with high and narrow arch	June 2.—Same	Silk-worm gut	18th day	Healed as above. Sept., 1897.—Heard by letter: Improved but imperfect.
35. St. Thomas's Hosp.	"	M.	7	Complete cleft of soft and hard palate, with fairly high arch	June 17.—Same	"	10th day	Healed as above. Sept., 1897.—Voice much improved. Sings well, but he hisses a little in talking.
36. St. Thomas's Hosp.	"	F.	3	Cleft of soft palate	July 1.—Langenbeck's operation; pillars also divided	"	12th day	Healed as above. Sept., 1897.—Voice absolutely normal.
37. Private	1894	M.	3	Complete cleft of both hard and soft palate into left naris in front, and exposing both nares behind	May 26.—Same. Lateral incisions prolonged round molar teeth on to cheeks; mucous membrane from nose was turned down to fill up gap in front; pillars of fauces divided	Horse-hair	12th day	Healed as above. Oct., 1897.—Heard from mother: "Talks very distinctly if he likes, but his voice has somewhat of a nasal tone."

38. St. Thomas's Hosp.	"	F.	8	Cleft of soft palate and posterior half of hard palate, with cicatricial sides from a previous operation	Oct. 10.—Langenbeck's operation; pillars of fauces divided	Silk-worm gut and two horsehair	16th day	Healed as above. Sept., 1897.—Voice very much improved; still has slight nasal twang.
39. St. Thomas's Hosp.	"	M.	26	Almost complete cleft of soft and hard palate, with high arch	Oct. 31.—Same	Silk-worm gut	9th day	Healed as above. 1897.—Excellent result, although the peculiar voice is still present. Became a hospital porter.
40. St. Thomas's Hosp.	1895	M.	9	Complete cleft of soft and hard palate and through alveolar on left side; right side continuous with septum nasi	May 18.—Same	Silk-worm gut and horsehair	10th day	Healed as above. Sept., 1897.—Heard by letter: "Talks very much plainer."
41. St. Thomas's Hosp.	"	M.	4	Very complete cleft of soft and hard palate, with high arch	June 19.—Same	"	9th day	Healed as above. April, 1897.—Voice good.
42. St. Thomas's Hosp.	"	M.	15	Complete cleft of soft and hard palate; fairly narrow cleft, but not high arch; tissues at the side scanty and thin	July 24.—Langenbeck's operation, but lateral incisions carried round molars on to cheeks; pillars of fauces also divided	Silk-worm gut, 3; horsehair, 6	10th day	Healed as above.
43. St. Thomas's Hosp.	1896	F.	9	Complete cleft of whole palate through alveolus	May 15.—Same	Silk-worm gut	7th day	Healed as above. Sept., 1897.—Can now be easily understood; this was impossible before.
44. St. Thomas's Hosp.	"	F.	13	Very wide and complete cleft of hard and soft palate, with flat arch, so wide that the ordinary operation is almost certain to fail	July 29.—Davies-Colley operation	Catgut and silk	No note	Healed. Sept., 1897.—Heard by letter: "Mouth well, but no improvement in voice." Refuses to come to hospital.
45. St. Thomas's Hosp.	"	F.	4	Cleft of soft palate	Sept. 25.—Edges pared, but no lateral incisions	Horsehair	37th day	Suppurated. Some gaping of wound, so the sutures were left <i>in situ</i> . Eventually healed through out. Sept., 1897.—Voice improving.

Case.	Year.	Sex.	Age.	Nature of cleft palate.	Operation.	Sutures.	Sutures removed.	Remarks.
46 St. Thomas's Hosp.	1896	F.	2	Cleft of soft palate and a portion of hard palate	Nov. 4.—Langenbeck's operation	Horse- hair	—	Died of shock. This child had been kept two months in hospital on account of unsatisfactory general condition.
47 St. Thomas's Hosp.	1897	M.	23	Complete cleft of soft and hard palate, with high arch	April 6.—Same. Pillars of fauces also divided	"	10th to 17th day	April 26.—Healed, except a small hole at junction of hard and soft palate, but this will in time close of itself. Sept., 1897.—Pa- late quite healed; voice improved, but still very imperfect.



ON TWO CASES  
OF  
ABDOMINAL ACTINOMYCOSIS;

WITH SOME REMARKS ON THE  
DIFFERENCES IN THEIR SYMPTOMS AND THE DIFFICULTIES  
OF DIAGNOSIS IN THIS DISEASE.

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By G. H. MAKINS,  
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THE steadily increasing frequency with which cases of actinomycosis are published shows that these cases are by no means so rare of occurrence as was at one time supposed; none the less, as in the first instance here recorded, it still occasionally happens that the diagnosis is first made in the post-mortem room, a fact much to be regretted, as there is now no doubt that the disease is to be cured by the internal administration of iodide of potassium if the treatment be commenced early enough, as has been long known in the case of animals. It is for these reasons that I have ventured to record the two cases in our 'Reports,' with a few remarks on the difficulties that surrounded their diagnosis.

The two, moreover, well illustrate the great variability of the local and general symptoms which forms the chief obstacle to the speedy recognition of their nature.

CASE 1.—C. W—, æt. 25, domestic servant. Family history unimportant. The patient's health has always been

poor, and at various times she has suffered with severe anæmia and concurrent pain in the chest; she had smallpox during childhood, and on several occasions she has had ulcerated sore throats. Six years ago she had an illness, for which she became an inmate of University College Hospital. This commenced with sharp pain in the epigastrium, after which a lump developed in the left iliac fossa, which became painful and tender. While in the hospital she had a white discharge from the vagina, but she cannot say whether it was offensive or not. She was treated with fomentations and blisters, and her catamenial discharge, which had been regular before, ceased for thirteen weeks.

In October, 1896, she had an attack of nausea and vomiting, and she was told that she had caught "a chill on her liver and kidneys." This attack was accompanied by considerable epigastric pain, and never entirely subsided. About a fortnight before admission rheumatic pains in various joints appeared, which finally settled down to the region of the hips and the front of the right thigh.

On December 11th, 1896, she was admitted into Charity Ward, under Dr. Sharkey. On admission her condition was as follows: complains of acute pain in the right hip, and general malaise and fever. The face is anæmic, the skin moist, and she perspires freely. There is acute tenderness over the front of the right hip-joint, but no redness, and no visible affection of any other joint.

The chest moves well and equally; no sign of disease can be detected in the lungs. Cardiac dulness commences at the fourth costal cartilage, and does not extend beyond the left sternal border; the impulse is felt in the fifth interspace, half an inch internal to the nipple line. The first sound is prolonged and not quite clear, but no definite murmur is audible; the second sound is normal. Pulse 96, soft and of moderate volume. The abdomen is natural, and no sign of visceral disease is to be detected. Urine normal in colour, reaction acid; there is a deposit of amorphous urates, many leucocytes, and a few squamous epithelial cells. The patient was ordered sodium salicylate grs. xx every four hours, and the hip was treated with hot fomentations.

During her stay in Charity Ward this treatment was con-

tinued ; the temperature, which once reached  $102.5^{\circ}$ , subsided somewhat, but she continued to get an evening rise averaging  $100^{\circ}$ , the pulse-rate averaging about 100, and at times she perspired freely. Meanwhile the tenderness and pain localised itself more definitely to the right iliac fossa ; and it was noted that the tongue was red and raw, the bowels being somewhat costive and acting irregularly.

On December 19th the following note was made :—" There is now a hard, inflammatory swelling on the inner side of the iliac bone, apparently beneath the iliac fascia. This evidently accounts for the pain and flexion of the hip. The hip and sacro-iliac joints are normal, as is the case also with the pelvic organs. Examination of the rectum, however, reveals some slight thickening of the rectal wall due to the abscess felt from above. Spine normal."

A provisional diagnosis of tubercular disease of the ilium was now made, and the patient was transferred to Elizabeth Ward. When seen in the surgical ward she kept the recumbent position with the right thigh flexed, any attempt to straighten the limb causing much pain. On the afternoon of December 28th an incision three inches in length was made parallel to Poupart's ligament, and a director was pushed through the iliac fascia ; no pus was found, but a quantity of granulation tissue was scraped away. No bare bone was discovered, but the wound bled somewhat profusely, and a pair of pressure forceps had to be left on to restrain some hæmorrhage from the bottom of the wound. The wound was sutured, and a drainage-tube left in. The wound was dressed on the 29th, when only a little blood-stained fluid was found in the dressing, and on the 30th the forceps were removed. The discharge was now noted to smell very foul, and the temperature had risen to  $101.8^{\circ}$ .

On December 31st the patient expressed herself as feeling well, but the discharge had a distinctly fæcal odour. The cyanide dressings were therefore discontinued, and lint with warm boracic acid lotion applied in their stead.

January 2nd, 1897.—The patient is comfortable, but still keeps her thigh flexed to about the same degree ; the temperature has been gradually falling since the first dressing,

and this morning is 99°; the discharge is very small in amount, and does not smell offensive; the wound is dressed every six hours with hot boracic lotion.

During the next month there was little variation in the condition from day to day; the temperature fluctuated between normal and 101°, and the discharge was small in amount and occasionally very offensive. Meanwhile the patient appeared to steadily lose ground, she had occasional diarrhœa, took her food badly, and assumed a very anæmic and suffering aspect. The diagnosis was now changed to one of probable appendicitis, with abscess and perforation.

On February 8th the tube was removed, as the discharge seemed to issue freely enough. The granulations at this time, however, were noted to be very peculiar in appearance; a continuous white membrane, much resembling a diphtheritic one, covered the whole surface of the wound, and the discharge was thin and watery. A microscopical examination was made for tubercle bacilli, but none were found, and nothing special was noticed in the preparations. The granulations were therefore rubbed down with silver nitrate, and they improved in appearance. As the fever continued the discharge increased, and emaciation was progressive. A second exploration was decided on under the supposition that the cause of the suppuration might be found in deep-seated bone disease in the pelvis. On February 16th, ether having been administered, the wound in the groin was opened up, and the finger introduced. The cavity was found to be very extensive, passing down to the front of the hip-joint on the outside of the pelvis, while within the cavity a bullet probe was readily passed into the loin. A counter incision was made in the loin, and a drainage-tube passed between the two openings. During this exploration nothing was discovered to distinguish the sinus from an ordinary tubercular one, and in spite of the negative search for tubercle bacilli it was considered that the case was probably after all one of deep bone disease, the exact seat of which could not be discovered. The course of the case during the next month differed little from that of the preceding one; it was characterised by the same fever, steady emaciation, and progressive anæmia. The discharge came mainly from the



opening in the groin, was very foul, and the same membrane-clad appearance was noted in the granulations.

During the month of April the discharge on several occasions contained fæces, and the patient suffered considerably on and off from diarrhœa. Meanwhile her appetite entirely failed; hectic fever, ranging between normal in the morning and  $101.5^{\circ}$  in the evening, was constant, and the anæmia and emaciation became extreme. The patient was evidently steadily sinking by the slowest degrees possible. Reduced iron was given internally, and a final attempt was made to get to the bottom of the case. Another digital examination, however, only afforded the same negative result: the finger passed into the same soft-walled cavity as before, it could be introduced over the muscle beneath the iliac vessels and deeply into the pelvis, and upwards towards the spine, but no bare bone could be discovered, and no abnormal induration was detected. Cover-glass preparations and a culture were again made, with a view to demonstrating the presence of tubercle bacilli, but as on the former occasion the result was negative. I now felt that a certain diagnosis as between tubercular bone disease and inflammation originating in ulceration of the vermiform appendix was impossible, but I must frankly own that the real nature of the disease never for a moment suggested itself to my mind.

On May 4th the patient died, no material change having taken place in her symptoms, the course of which had been a uniform one from bad to worse, only remarkable in its extreme consistency. A post-mortem examination was made on May 5th by Dr. Box, of which the following is the report.

The body was extremely emaciated, the right leg much swollen, and the skin of thigh presented a reddish discoloration. There was an entire absence of fat throughout the body. A sinus in the middle of a short incision in the right iliac region led down into the right iliac fossa, and an almost healed lumbar incision was present. On opening the abdomen, an old thick-walled abscess cavity was found behind the cæcum, partly on the psoas muscle and partly in its substance: this contained rather offensive pus, which had

tracked along the psoas into the thigh behind the great vessels, and in front of the hip-joint.

The stump of the vermiform appendix was dissected from the anterior wall of the abscess, with the cavity of which it communicated. A fæcal concretion as large as an almond lay free in the abscess cavity. There was no bone or joint disease in connection with the abscess.

The liver (weight 42 oz.) was not enlarged, but its surface presented circular raised yellowish discolorations, mostly larger in diameter than a penny : these on section proved to be roughly hemispherical suppurating masses, but the suppuration showed itself in the form of a number of small foci embedded in a honeycombed reticulum of glistening tissue, the whole characteristic of actinomycosis. Large areas of healthy liver separated the softening masses. The vessels of the liver appeared quite healthy, and the biliary system was normal (see Plate).

The spleen was large and very firm, but not lardaceous—neither it, the liver, nor the kidneys reacting to iodine. The



From a specimen of the mycelium seen in a section of the liver prepared by Mr. Shattock. Mr. Gwilliam has effaced the liver structure in order to give prominence to the mycelium in his drawing.

kidneys were pale, with yellowish cortical striæ, but in all other respects appeared normal. The heart was rather wasted, but structurally healthy. The lungs were normal.



DESCRIPTION OF PLATE I,

Illustrating Mr. G. H. Makins' Two Cases of Abdominal  
Actinomycosis.

Section of the liver prepared with formalin solution by Mr. Shattock, showing  
the actinomycotic deposits.







The swelling of the right leg was accounted for by a recent femoral thrombosis. A small granular thrombus was also found in the hepatic vein.

Microscopical examination of the tissues showed an abundance of the mycelium of actinomycosis, but no clubs, and no typical ray organisms. The process had probably been too acute for the development of these; but in spite of their absence the liver presented one of the most typical examples of infection of this organ which has been recorded.

CASE 2.—A. C—, æt. 33, farm labourer. The patient came under the care of Dr. Maude of Westerham in January, 1897. He was then complaining of some colicky pains in the abdomen; these soon disappeared, and he resumed his work. On February 5th he returned, complaining of pain and tenderness in the right iliac fossa; on the next day he had general colicky pains again and borborygmi; there was no sickness, and his bowels had acted on the 5th. The temperature was 100°.

On February 7th he was seen again; he was evidently in severe pain over the whole abdomen, and there were two distinctly tender spots, one corresponding with McBurney's spot, the second rather nearer the pubes. There was nothing palpable in the right iliac fossa, but on rectal examination a slight fulness was felt at the brim of the pelvis in that region, and marked tenderness. The bowels remained confined.

February 9th.—Bowels open after a copious enema with the long tube; large clay-coloured motion. Temperature slightly over 100°, pulse 80, tongue very foul, pain above pubes, and increased frequency of micturition all day.

11th.—General condition little changed, but pain improved. A small sausage-shaped swelling is palpable, extending from McBurney's point towards the iliac crest; it rolls under the finger, is about the size of a thumb, and is not tender.

For the next thirty-two days he improved steadily, losing all pain and tenderness, the temperature becoming normal, and he was able to take solid food and get out of doors.

March 15th.—The pain has returned in exactly the same spot. The urine is normal, containing neither albumen nor pus.

21st.—The small sausage-shaped tumour is still palpable, and is extending upwards towards the umbilicus. Abdomen more tympanitic. The bowels are confined, acting only with enemata. Tongue very foul. Temperature raised irregularly, but not more than one degree. On the 28th the mass is steadily increasing towards both umbilicus and iliac crest, but it is quite distinct from the liver, and does not reach into the loin; it is dull on percussion. The patient is becoming much emaciated. The temperature rises to  $99^{\circ}$  to  $99.5^{\circ}$  in the mornings. Pulse is losing in strength, but except on one occasion it has not been rapid, and then only 100. The bowels are opened every other day by enema, otherwise they are very obstinate. Urine, sp. gr. 1030, sparse in quantity with excess of urates. No purgatives were given, but  $\frac{1}{2}$  a grain of Ext. Belladonnæ frequently, and 1—2 grains of opium occasionally.

On March 31st the man was admitted into St. Thomas's Hospital. He looked ill, his temperature was  $101.5^{\circ}$ , and a large tough indurated swelling occupied the right iliac region.

On April 1st ether was given, and an incision was made by Mr. Clutton over the region of the appendix: a quantity of granulation tissue and about two or three ounces of purulent fluid were evacuated; the latter was very offensive, so the cavity was washed out, a large drainage-tube inserted, and the wound dressed with bichyanide gauze.

The temperature at once fell, and the patient expressed himself as feeling much better. During the next fourteen days a moderate quantity of foul discharge came away, gradually becoming less in amount, and on April 15th the tube was replaced by a gauze plug. The evening temperature was now raised, and for a few days reached from  $100^{\circ}$  to  $101^{\circ}$ .

April 22nd.—There is a great deal of induration around the wound, but no general tenderness; the abdomen moves well with respiration. The wound has for some days past been treated with warm boracic fomentations.

The condition altered little during the next few days, except that the induration increased, and there was considerable tenderness in the region of the umbilicus, and the skin here became reddened and inflamed.



27th.—Ether was given, and a director was passed into the wound; a track was found leading up to the umbilicus, and an incision was made just below this point, evacuating some pus. Another track was found deep to the abdominal muscles, leading in the same direction, and a second incision was made over an inflamed area about two inches below the original wound, releasing a small collection of pus. In making this incision the deep epigastric artery was divided, and the incision had to be continued into the original wound to allow the vessel to be secured. The cavities were all washed out with sterilised water, plugged with bichloride gauze, and a dressing of the same material applied. The dressing was changed on the 28th, and the warm boracic fomentations resumed.

During the next month there was little change, the large plate-like mass in the abdominal wall persisted: there was a moderate amount of discharge, and little tendency to closure of the wound. The general condition was on the whole improved, the temperature remained practically normal, he had little or no pain, the bowels acted regularly, his appetite was good, he gained some flesh and improved somewhat in appearance.

May 30th.—The sinuses remain *in statu quo*; they still retain the outlines of the original incisions, though reduced in size; the margins are extremely indurated, the granulations are slightly redundant, brightish red in colour, with fine specks upon them, and the discharge is thin and very moderate in amount. The surrounding area of induration has slightly contracted, the skin is of a dark reddish colour in places, and there is under these spots a boggy feeling indicating a tendency to soften. The induration is for the most part confined to the abdominal wall, extending about two inches above the umbilicus, and one and a half inches to the left of the median line. To the right it extends little beyond a line carried up two inches behind the anterior superior spine of the ilium, but in the iliac fossa the infiltration evidently spreads deeply, and probably involves the cæcum. The liver dulness is quite distinct, and is about normal in extent. The general condition is unaltered and fairly good.

The striking resemblance of the local conditions to those observed in actinomycotic infection now became evident, and with the patient's permission a small mass of the granulations was removed for microscopical examination, and the trial of an artificial culture. Both these trials, however, failed to give information, and a positive diagnosis could not be made. Not the less it seemed advisable to put the patient on a course of iodide of potassium, and this was done, 10 grains being given three times daily.

This treatment was continued throughout the month of June, and the conditions both local and general certainly steadily improved. During this month the granulations were noticed to be covered with a somewhat gelatinous layer of matter.

At the commencement of July the mass was decidedly smaller, but the deep induration in the region of the cæcum remained as before: between the two upper openings an elongated area of the abdominal wall had become purplish red, and two soft boggy spots developed in this. The patient was therefore anæsthetised, and these were incised. Out of each a quantity of yellow broken-down granulation tissue was scraped with a Volkmann's spoon. This tissue was submitted to Mr. Shattock for microscopic examination, and this time he was able to report the presence of the mycelium of actinomycosis, although very sparsely distributed. The dose of iodide of potassium was increased to 15 grs. on July 5th, so that the patient now took 45 grains daily. On August 1st the iodide was increased to 1 drachm in three doses of 20 grs. At this time the small recent abscesses had almost entirely healed, and it was noted that the general area of induration was stationary. The liver dulness was about normal, extending from the fifth rib in the nipple line to the upper border of the tenth rib. The temperature had remained consistently normal; the man looked healthy, and was steadily gaining flesh. On August 16th the doses of iodide were further increased to 30 grs. three times daily, and he was sent for a few weeks' stay in the Convalescent Home at Swanley.

Although the two cases above detailed were both infections of the same region and probably the same organ of the body,

they offer very marked differences in symptomatology, and, in fact, illustrate well the chronic and acute forms which actinomycotic infection may take on.

*Mode and date of infection.*—In the case of the girl, whose occupation was that of a domestic servant in London, the source of infection might have been difficult to discover, but in an interview I had with her mother after the girl's death I learned that during the previous September the patient had been for a day's holiday into the country at High Wycombe. On this occasion, moreover, she had collected a bunch of wheat and barley, and sent it home to her mother. A possible date and mode of infection from chewing raw grain were thus obtained, and I think that there is good reason to connect these facts with her subsequent illness.

The case of the man was somewhat more easy to investigate in these matters, since his occupation was that of a farm labourer, habitually working in the fields or looking after animals. I learned from the man that there had been a sick calf on the farm, and hence I wrote to Dr. Maude of Westerham, under whose charge the patient originally was, and he kindly sent me the following information.

"The bailiff says that no stock have been ill on the farm (with the exception of some young heifers last autumn) during the last year. He has never seen a case of 'lumpy jaw' in his life, and none of the stock have had any bone disease. The veterinary surgeon, Mr. J. Ashton, tells me that the illness of the young stock was the common sort of fermentative enteritis that cattle get from inferior cereal food. The heifers had been fed on mixed sweepings of rice, barley, &c., such as is often sold as chicken's food. The animals quickly recovered, and none had any sign of 'lumpy jaw,' or any bone trouble or abscess. He has not seen a case of 'lumpy jaw' in the neighbourhood for some years.

"A. C— has no duties with regard to the stock, but he is frequently employed in handling and storing grain,—in fact, looking after the grain stores is one of his specified duties. There were two large crops of wheat and oats grown on the two farms where he is employed. This grain is all gone, the wheat sold in Westerham, the oats eaten by the horses on

the farm without any bad results. A. C.— always superintends and manipulates the grain when threshing. They threshed on the farm two or three times last winter, each time for twelve to twenty-four hours; the last threshing was wheat, two days before his symptoms came on, but he had really been suffering for some weeks before this.”

Each of the two cases, therefore, probably were infected in the autumn, the season which has been shown by Boestrom to be the most usual time, and probably both from grain.

*Mode of onset.*—In both instances the commencement of the process was of a certain degree of acuteness, and in both digestive symptoms were, as might be expected, prominent. In the case of the girl this character was maintained throughout, the temperature only falling at times for short periods after the setting free of collections of breaking-down granulation tissue. In the case of the man a preliminary rise of temperature was followed by a fall to practically normal, only interrupted by occasional rises accompanying the breaking down of portions of the infiltration.

The early history of both cases, therefore, was almost identical with that of ordinary cases of appendicitis.

The first point which should have aroused suspicion in the case of the girl was the absence of pus and the presence of friable granulation tissue when the primary exploration was made; this, unfortunately, was passed by at the time on the supposition that the process was tubercular. In the man this aid was not offered, as a small quantity of offensive purulent fluid was evacuated, together with breaking-down granulation tissue not materially differing from what one might have expected in a case of ordinary appendicitis. In his case, however, there was a peculiarity, as the characteristic wide-spread induration of actinomycosis had already appeared.

The subsequent progress of the two cases, as far as the local process was concerned, was somewhat distorted for purposes of comparison by the fact that the man was put on specific treatment. I think, however, had this not been the case, that striking differences would still have been present.

The most important of these was the almost entire absence of local induration, which persisted throughout in the sur-



rounding tissues in the girl. This is not uncommon in the acutely progressing cases, but it removes one of the most useful means of diagnosis; and it was this peculiarity, in fact, which first put us on the right scent in the case of the man.

The next point was the appearance of the granulations.

In the girl this was peculiar; on two separate occasions it was noted that the wound was covered with a thin, whitish layer, somewhat resembling a diphtheritic membrane: I took this at the time to be a layer of lymph, clothing œdematous granulations. It is much to be regretted that a proper examination of this membrane was not made, but I contented myself with having the wound discharge searched for tubercle bacilli: this search, as has already been mentioned, was fruitless, but it is of interest in showing that in spite of the size of the actinomycotic mycelium, the threads are not such prominent objects as to at once challenge attention. There is little doubt, however, that if the granulations had been examined, only mycelium and not fully developed actinomyces would have been found.

In the man's case the discharge was examined without result, and this was then supplemented by the removal of some granulations from the mouth of one of the fistulæ and a second search: again a negative result followed, although the search was made by so experienced an observer as Mr. Shattock. I should, however, say with regard to these granulations that they really offered nothing special in appearance; there was a slightly speckled yellow surface, but the yellow spots were apparently only small spots of yellow discharge, and not actinomyces as is often the case.

The mycelium was first found on the examination of a specimen of loose friable granulation tissue removed from the cavity of abscesses opened at the end of the twelfth week of his stay in hospital, and then was very sparse in its distribution. The specimens were prepared by Gram's method, and stained with gentian violet.

In general character, in fact, there was little in the appearance of either the granulations or the discharge in either of the cases to make the diagnosis of tubercle improbable.

The course of the local process in the girl gave little help, mainly on account of the absence of the usual characteristic induration, but this is not uncommon when the process is as acute as was here observed. The girl was a feeble subject; hence the local reaction of the tissues was insignificant, and direct extension was able to go on without any serious check. The man, on the other hand, was a healthy farm labourer, better suited to withstand the ravages of the disease; hence the local reaction was a strong one, and all the local signs well developed. I might again dwell here on them. The swelling, at first a local one, rapidly became fixed, and then surrounded by an extremely dense and hard infiltration; this spread to wide limits, showing no disposition to recede until surgical treatment was commenced. This coincided with the breaking down of the first focus. A spot fairly corresponding to the primary swelling became soft and boggy, the skin reddened, and an incision let out purulent matter and granulations. A short halt only followed this; the induration extended steadily, and fresh foci softened, each of these occurrences being accompanied by slight exacerbations of fever and general malaise. The general picture now seemed unmistakable, and in spite of our failure to find actinomycetes, treatment with iodide of potassium was commenced. This, as is usually the case, was at once followed by a cessation of the activity of the process, and since that time the improvement, though slow, has been steady and continued.

*General symptoms.*—It will have been noted that the general symptoms differed only in degree and not in character. In both cases the first signs, as would be expected, pointed to disturbance of the digestive functions; in the case of the girl these were to some extent obscured by the suspicion of rheumatism, in the case of the man by some trouble in micturition, but in each instance these symptoms were transitory. The next point is the attendant fever. There was considerable difference here, coinciding with the corresponding progress of the local process. In the girl, owing to the want of resistance on the part of the system, the destructive feature was the prominent one, fresh infiltration being as rapidly broken

down; hence the temperature was of a simple hectic type. In the man, on the other hand, the resistance was considerable, and the breaking down of a focus was followed by a period of comparative quiet, during which the process of extension slowly continued; and we find that the temperature exactly corresponds, a short spell of hectic being followed by a period of fairly normal temperature.

In both cases emaciation was a prominent feature; in the girl it was continuous, became extreme, and was accompanied by the most profound anæmia,—the latter, no doubt, in part due to the septic absorption which throughout accompanied the process. In the man rapid loss of flesh was noted in the early part of the illness; this, however, became less marked, and as soon as he was got under the influence of the iodide he rapidly improved in this respect, and at the time when he left the hospital to go to the convalescent home he weighed within a few pounds of his normal weight.

*Secondary deposits.*—These only occurred in the case of the girl, and then in the liver, the common seat in abdominal actinomycosis. No suspicion of these occurred during life, although after death the liver afforded so typical an example of the disease. This was not only to be accounted for by the fact that there was no particular reason for special attention being directed to the organ, but also, as its weight (42 ounces) shows, the liver was not at all enlarged, and it was certainly normal in size on admission. The only sign which pointed to its affection was the light colour and loose nature of the motions which the girl passed during the latter days of her illness, and this was merely regarded at the time as an evidence of septicæmia. It might here be noted, that in the light of this experience, it is unsafe to exclude secondary infection of the liver from the sole fact that no enlargement exists.

In compiling these remarks I have necessarily dwelt mainly on the clinical aspects of the cases,—this for two reasons: first, because, as is evident, the want of a proper diagnosis prevented any useful observations in the first case; while of the second I have nothing new to say. The one pathological point I wish to emphasize is the clinical difficulty

of demonstrating the presence of the organism, even when a conviction exists that it ought to be readily found.

Lastly, as to the treatment adopted. In both cases operative means were resorted to. In the first case all was done which was possible, and the experience gained shows the hopelessness of the treatment of this disease by operative means alone; even had we been thoroughly conversant with the nature of the process we were treating, no more radical clearance could have been effected, as the infiltration was ill-situated and much too wide-spread to be capable of being completely extirpated. If, however, the nature of the disease had been at once recognised, it is clear that a course of iodide of potassium might have been commenced prior to the secondary infection of the liver, and the patient's life saved. I cannot help thinking that the acute process would have probably been more rapidly affected and stopped, than proved the case in the more chronically proceeding one, with its attendant surrounding protective barrier of infiltration.

The second case illustrates the subordinate use of operative measures in hastening the removal of the diseased tissues. As in local tuberculosis, there can be no doubt that economy both in time, and in the strain put upon the system, results from the timely removal of the tissue which has already broken down and become disorganised.

The second case was originally under the care of my colleague Mr. Clutton, and I have to thank him for permission to make use of it, and I must here also express my best thanks to Mr. Arthur Maude, of Westerham, both for the excellent details he sent us of the progress of the case prior to admission, and for his kindness in so thoroughly investigating the possible sources of infection.

October 13th.—The patient has returned from the Convalescent Home looking fat and well, and is now fully up to his normal weight.

A patch of induration, about four inches in diameter, persists in the abdominal wall, and the fistula corresponding with the primary incision is still open. This mass is, however, freely moveable, and the deep induration has dis-



appeared. It is possible that the fistula leads to the seat of the primary deposit.

Examination of the discharge gives a negative result as to the presence of organisms.

The patient is still taking 3iss of iodide of potassium daily, and it in no way interferes with his general health.



THE INDUCTION AND MAINTENANCE  
OF  
ANÆSTHESIA FOR OPERATIONS ABOUT  
THE NOSE AND THROAT.

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THE question, should an anæsthetic be administered to a patient about to undergo an operation on the nose or throat, may easily be answered in the affirmative; but the questions, what anæsthetic should be chosen, and what method of administration should be employed, cannot be so summarily dismissed. The subject is an important one, interesting alike to both surgeon and anæsthetist, for since the recognition of adenoid vegetations in the naso-pharynx, and the manifold ailments and diseases which can be directly traced to them, these operations have very largely increased in number, while there seems to be at present no uniformity of opinion in the profession as to the choice of an anæsthetic for these particular cases. That this is so is proved by the fact that for the removal of adenoids the following procedures have been recommended, viz.—

1. Operation without anæsthetic.
2.     „     under nitrous oxide gas (1).
3.     „     „     nitrous oxide followed by ether (2).
4.     „     „     nitrous oxide gas and ether followed by chloroform  
                                 given through a tube from a Junker's inhaler (3).
5.     „     „     A.C.E.
6.     „     „     chloroform (4).
7.     „     „     ethyl bromide (5).

By the administration of an anæsthetic the following important advantages are gained, viz.—

1. Fright, pain, and consequent shock are avoided.
2. There is no need for hurry, and the surgeon can thus perform his operation deliberately and thoroughly.
3. The patient is quiet and unresisting.
4. In case of severe hæmorrhage, the surgeon can take the necessary steps for checking it, unhampered by the struggles of a frightened patient. It is true that hæmorrhage of any moment very rarely occurs; but still many cases have been recorded, and the possibility has to be taken into consideration.

When we remember that the vast majority of patients who require operations for adenoids are young children, the importance of these advantages will be readily conceded.

Having, then, decided that an anæsthetic should be administered, there remain to be determined—

1. The choice of an anæsthetic.
2. The method of administration.

As is well known, as regards smallness of risk to life, *nitrous oxide* stands *facile princeps*, and on this account has been recommended by some, its supporters stating that the operation can be efficiently performed during the very limited time that this anæsthetic will allow. Whether this is so, however, is a question for the surgeon and not for the anæsthetist to decide. Many—possibly most—surgeons deny this, and habitually take much longer, so that nitrous oxide in the majority of cases is unavailable.

Dr. Dudley Buxton in his book ‘Anæsthetics,’ says he has used gas and ether extensively for some years with success. He also says, “I have found that when undesirable to use chloroform the A.C.E. mixture in succession to



gas answers fairly well in these cases; it does not excite so much hæmorrhage as ether, and the patient can, if necessary, be again and again anæsthetised after emptying his mouth of blood until the operation is complete."

*Ether*, though undoubtedly a safer agent than chloroform, has more than one disadvantage in these cases, viz.—

1. It requires an inhaler, which is apt to frighten little children.

2. It causes congestion and increased hæmorrhage, with the secretion of much saliva and sticky mucus, especially in young children.

3. Unless the anæsthetic is pushed far beyond what is advisable, the duration of the anæsthesia is not sufficient, and the operation has to be suspended while the face-piece is reapplied.

*Ethyl bromide*.—Bishop, in his book 'Diseases of the Ear, Nose, and Throat,' strongly advocates ethyl bromide, and states that the duration of anæsthesia produced by this agent averages about five minutes, and that it has been used over seven hundred times for operations performed by himself and his assistants without accident. This is strong testimony in its favour; but in this country those observers who have tried it do not seem enthusiastic about it, and the sum of their testimony is, that as an anæsthetic it is only suitable for short operations, and for them even, inferior to nitrous oxide.

*Chloroform*.—Though most surgeons seem to agree that chloroform is the most convenient anæsthetic for these cases, many deprecate its use on the ground that it is dangerous. The operation for the removal of adenoids is in itself a comparatively trivial one, and most beneficent in its results, so it would be most unfortunate if, owing to accidents occurring under the anæsthetic, an impression were to get abroad among the public that it was a hazardous procedure, and parents were thus prevented from submitting their children to operation. But chloroform, provided that certain conditions which will presently be enumerated are complied with, as far as our experience at St. Thomas's Hospital in the Throat and Ear Departments goes, seems to be perfectly safe and to give the best results. In the Ear Department

alone, between November 18th, 1895, and August 23rd, 1897, it has been given 234 times for this operation without accident and with the most satisfactory results.

The points to be considered in the administration of chloroform for adenoids are as follows :

1. The position of the patient during the operation.
2. The degree to which anæsthesia is to be carried and maintained.
3. The time consumed in getting the patient under.
4. The apparatus which is best adapted to the purpose.

It will facilitate our decision on these points if we first glance at the accidents and mishaps which may arise. In addition to the ordinary dangers of chloroform there is the special risk of blood entering the larynx and trachea, also other foreign bodies, *e. g.* portions of adenoid tissue, tonsils, rubber off the gag, and teeth which have been dislodged by the gag,—an accident that may easily occur, since so many of the patients are just at the age of the second dentition, when the teeth are loose ; though, as far as my experience goes, these patients take chloroform very well, and have been singularly free from any of the ordinary dangers of the drug. I have seen all these special accidents occur, though fortunately without any serious effects, as in all cases the offending matter has been either naturally ejected or removed by the finger, without the necessity of recourse to tracheotomy.

As regards the entrance of blood into the larynx, there are two important safeguards to be observed :

1. The position of the patient.
2. The degree of anæsthesia.

If the patient be placed on his back with the head hanging over the edge of the table almost vertically downwards, the blood collects in the vault of the naso-pharynx as in a cup, and overflows through the nose and mouth, dribbling into the larynx being impossible. The hæmorrhage, at first free, usually very soon stops of its own accord ; but if not, firm pressure with a mounted sponge passed up behind the soft palate effectually controls it. It has been objected to this position that it increases the hæmorrhage, but this objection seems to be immaterial.

The next best position is on the side, with the patient's mouth well to the edge of the table, when the blood runs out at the angle of the mouth ; but this position is not so convenient either to the operator or the anæsthetist as the preceding.

After the operation is completed the patient should be laid on his right side with the head low, until fully recovered from the anæsthetic.

Position is most important, for if the bleeding be at all sharp it is practically impossible for even the most expert assistant to be certain of keeping the throat free by sponging when the patient is lying on his back with the head on a pillow.

*Degree of anæsthesia.*—The anæsthesia should be sufficiently deep for the abolition of the conjunctival reflex, but should stop short of abolishing the laryngeal reflex, and should be steadily maintained at this level throughout the operation. Though in the position above described blood cannot gravitate into the larynx, still it is possible for it to be sucked in during an act of deep inspiration ; but if the anæsthesia be so adjusted that the laryngeal reflex is retained, it is promptly coughed out again, and no harm is done.

*Time consumed in getting the patient under.*—It is important that the chloroform should be given slowly, and the patient allowed to become gradually soaked with it ; not only because this method is far safer than attempting to rush the patient under, but more especially because it is much easier to maintain the proper level of anæsthesia during the operation, as the anæsthetic seems to be more manageable and under control under the gradual soakage system. To acquire the knack of keeping the anæsthesia at the proper depth requires a little practice, but it can nearly always be managed if the anæsthetist gives his whole attention to his work.

*Apparatus.*—Krohne and Sesemann's improved Junker's inhaler with a flannel face-piece is the most convenient. With this apparatus the chloroform can be given with the greatest nicety. When the patient is under, the face-piece is removed, and the anæsthesia is maintained by giving whiffs of chloroform through the tube. In the case of young

children, the tube need not be inserted in the mouth, but can be held three or four inches away, and the vapour sprayed over the mouth ; in this way the anæsthesia can be very easily maintained, and the tube is not in the operator's way. With a drop-bottle and mask I have found it exceedingly difficult to regulate the depth of anæsthesia, and the mask is constantly in the operator's way.

It is, perhaps, hardly necessary to say that the respiration should be most jealously watched, for from the very nature of the operation, the mouth being gagged widely open, and the presence of fingers and instruments in the throat, it is more than ordinarily likely to be interfered with, and it is well known that a dose of chloroform which is perfectly safe while elimination is free, very quickly becomes dangerous when respiration is interfered with. By closely watching the respiration and suspending the operation for a few seconds while the patient gets a few breaths unimpeded by the surgeon's fingers, &c., this source of danger can be entirely avoided.

Chloroform given by the method above described is equally applicable to many other operations about the nose and throat, *e. g.* removal of hypertrophied inferior turbinate bones, nasal polypi, spurs from the septum nasi, opening the antrum of Highmore, Rougé's operation, removal of the tongue, staphylorrhaphy, &c. ; but where the operation is likely to be much prolonged and attended by free hæmorrhage, *e. g.* removal of extensive malignant growths from the naso-pharynx, pillars of the fauces, tonsils, &c., a preliminary tracheotomy and the administration of chloroform through the tracheotomy tube conduce much to the comfort of both operator and anæsthetist, and, what is more important still, to the safety of the patient.

To sum up, the practice at St. Thomas's Hospital proves that, provided the precautions above emphasised are carefully carried out, chloroform can be given for all nose and throat operations with at least as much safety as in any other operation ; and after seven years' experience with it in the Ear Department and in private practice, I personally consider that it is the best anæsthetic for the purpose.



*References.*

1. *Lennox Browne.* 'Diseases of the Throat.'
2. *De Havilland Hall.* 'Diseases of Nose and Throat.'
3. *Hewitt.* 'Anæsthetics.'
4. *MacBride.* 'Diseases of Throat, Nose, and Ear.'
5. *Bishop.* 'Diseases of the Ear, Nose, and Throat.'



# THE CHEMICAL NATURE OF THE ANTITOXINS.

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THE great advances made in recent years in our knowledge of the mode of production and use of antitoxic serum have rendered necessary a chemical investigation of the characters and properties of the antitoxin, in order that we may be able the more effectually to treat the serum by various reagents for different purposes. Thus, many of the sera are found to be too deficient in strength to allow of them being employed for therapeutic purposes, and must be discarded unless we can find some quick method, simple in application, by which we can either concentrate the serum down to a convenient strength, or else isolate, completely or partially, the antitoxin, and thus obtain solutions sufficiently powerful for use. In many samples of diphtheria antitoxic serum, some substances are present which, when injected, produce a rash, and it therefore becomes necessary for us to be able either to remove these substances or to separate the antitoxin from the serum in a moderately pure state in which it may be used for medicinal purposes.

The isolation and chemical examination of an antitoxin would be of the very greatest value in many directions. Besides enabling us to employ much simpler solutions for

injections in disease, it would undoubtedly lead to an accurate knowledge of the position and method by which it is manufactured, and might enable us to prepare it artificially.

As yet our chemical knowledge of the antitoxins is very scanty, chiefly because the preparation of the serum is a very costly process, and such as has been prepared has had to be utilised for clinical needs, and also because the complexity of the subject necessitates many preliminary experiments which have not yet been completed. In another direction the subject is complicated, inasmuch as we are dealing with a body which at most is only present in very minute quantities, and then accompanied by very large quantities of proteids, separation from which has been found to be very difficult.

Of previous attempts at the isolation of an antitoxin, Brieger and Boer<sup>1</sup> have given an account of several experiments for this purpose. They worked upon the antitoxins of tetanus and diphtheria. They first tested the mechanical proteid precipitants, such as ethyl alcohol, methyl alcohol, acetone, acetic acid and potassium ferrocyanide, dilute solutions of mineral and organic acids, &c. All these precipitate the antitoxin completely, but accompanied by large quantities of proteids. They found, however, that much of the antitoxin was destroyed by alcohol or substances reacting strongly acid, the amount of loss depending largely upon the length of time the reagent was kept in contact with the precipitate, and also with the strength of the reagent. From such precipitates the antitoxin can be redissolved by quite weak alkalies which were found not to injure it.

The addition of solid ammonium sulphate or magnesium sulphate either alone or with sodium phosphate, of sodium nitrate and other salts gave precipitates which included the antitoxins, but which were not of use for the isolation of the antitoxin because this was only completely precipitated when enough of the salt had been added to simultaneously precipitate large quantities of proteids.

They also tested the formation of precipitates within the serum, with the aim of carrying down the antitoxin mechani-

<sup>1</sup> Brieger u. Boer, 'Ztschr. f. Hygiene,' Bd. xxi, S. 259, 1896.



cally; such precipitates, for instance, as calcium phosphate, produced by first adding calcium chloride, followed by an excess of sodium phosphate, or of the metallic hydroxides, *e.g.* aluminium hydroxide. These were already known to carry down antitoxin, but were found to be unsatisfactory because precipitation was, at best, only partial.

After trying many mixtures of salts they ultimately found that if crystals of sodium chloride and potassium chloride were added in the proper proportions, and the serum then kept at body temperature for about thirty-six hours, that a small precipitate was thus obtained, which contained the whole of the antitoxin. This was found to be the case for the antitoxins present either in milk or serum. The precipitate could be readily redissolved in very weak alkali, but still contained proteid mixed with it. They also showed that none of the antitoxin passed through a dialyser, and therefore that a solution might be freed from its salts by dialysis.

Having thus failed to separate the antitoxin by mechanical precipitation, they next endeavoured to turn it into some insoluble chemical compound from which the antitoxin could be subsequently recovered. Many metals were found to combine and form insoluble compounds, but were not of much value either because precipitation was incomplete, or because large quantities of proteids were precipitated with them. The most useful they found to be the zinc salts (sulphate or chloride), but though precipitation was complete, the same difficulty was again found, namely, that it did not isolate them from the proteids.

During the past year I have been engaged in some experiments upon the diphtheria antitoxin, with the primary aim of obtaining some simple method by which we could remove from a serum any rash-producing substances which it might contain, and this has necessitated the examination of the behaviour of the antitoxin when treated with many reagents. If the serum be dried at a low temperature it may be obtained in the form of amber-coloured translucent plates which readily break into a fine powder, and can be easily redissolved in water. Behring<sup>1</sup> states that a serum thus

<sup>1</sup> Behring, '*Fortschr. d. Med.*,' Bd. xv, S. 1, 1897.

dried loses none of its antitoxic properties, but I found that if the dehydration be more complete solution of the powder becomes more and more difficult, and some of the antitoxin is then found to have been destroyed. This was the case when extractions were made with such fluids as alcohol, acetone, &c., which acted as dehydrating agents, but may, in addition, have had a direct action upon the antitoxin.

One of the first questions that we would wish to decide is as to whether the antitoxin is a proteid. The main difficulty involved in obtaining an answer to this question rests in the small amount of antitoxin present in any serum, and the large amount of proteid associated with it. We may here briefly summarise those experiments which tend towards the conclusion that the antitoxin is a proteid. In the first place, we find that just as a proteid is coagulated and loses its distinctive qualities when its solution is heated above a certain point so, too, we find that a solution of diphtheria antitoxin heated above  $75^{\circ}$  C. at once loses its antitoxic properties. If the solution heated be the antitoxic serum, we, of course, get an abundant heat coagulum of proteid at this temperature, but that this had not acted simply as a mechanical precipitant follows from the fact that no antitoxin can be separated from the precipitate by extracting it with a dilute alkali, though such an extraction is effective in the case of any other precipitate which has simply carried down the antitoxin mechanically. In the second place we find that many reagents such as alcohol, ether, acetone, &c., which coagulate proteids, simultaneously destroy antitoxins. Thus, in one set of experiments I found that the diphtheritic antitoxin was completely precipitated by adding alcohol or acetone to its solution in quantity sufficient to precipitate all the proteids. If the bulky precipitate thus obtained be at once filtered off from the coagulating fluid, it is readily soluble either in water or dilute saline solutions. In such a solution the antitoxin is found in undiminished amount, none has been lost; though if the precipitant be kept for a longer time in contact with the precipitate, I found that more and more of the antitoxin was destroyed, and accompanying this more and more of the proteid is coagulated, so that it will no longer redissolve in water or saline solution.

A somewhat similar result is obtained, if instead of precipitating the proteids directly, the serum be first dried at a low temperature, and then extracted with either alcohol, acetone, or ether. In such an experiment I found that the longer the extractive was kept in contact with the dry serum, and the greater the bulk of the extractive employed, the greater became the loss of antitoxic strength; and here, again, whenever there was loss of antitoxin it was found that the extracted powder had, in proportion, become partially insoluble.

In the next place it is found that all solutions of salts which precipitate the antitoxin are also proteid precipitants. I have tested many such salts with results which on the whole confirm those obtained by Brieger and Boer. To mention the most interesting of these, I found that complete saturation of a serum with magnesium sulphate completely precipitated the whole of the antitoxin. The filtrate was absolutely inactive. A similar result was also obtained by half-saturation of the serum with ammonium sulphate, and therefore, as these two processes remove the globulins from their solutions, it follows that antitoxin, if a proteid, belongs probably to the globulin or some allied class of the proteids. As an extension of these experiments I have precipitated the globulins from the serum in fractions, and have examined the resulting precipitates to determine whether most of it was contained in one or two of the fractions. Each globulin precipitate, however, I found to contain antitoxin, and, moreover, in proportion to the amount of precipitate, so that the method of fractional precipitation of the globulins seems to offer no chance of separating the antitoxin, nor even of conveniently concentrating it.

Another plan which suggested itself as a possible method of separating the antitoxin from proteids, if the former be not a proteid, was to extract the dried serum with fluids in which proteids would not dissolve. At present I have not carried out many experiments in this direction, but so far as they have at present gone they again confirm the view that antitoxin is itself a proteid. Thus, in one experiment I extracted the dried and powdered serum for some time with a saturated solution of ammonium sulphate rendered faintly

alkaline with ammonia. The resulting extract, which gave a feeble reaction for proteids, proved, however, to be quite inactive.

A further possibility of separating an antitoxin from proteids lay in submitting the serum to artificial digestion. The proteids would thus be converted into the diffusible proteoses and peptones; and the antitoxin, supposing it not to be a proteid, would be unaffected. These experiments, however, have, so far as they have gone, yielded negative results, though they are not yet sufficiently complete to give any decisive evidence either to prove or disprove the proteid nature of the antitoxins.

Among the compound proteids which stand in close relationship to the globulins are the nucleo-proteids, and I have therefore made preparations of the nucleo-proteid from the serum and tested it for antitoxin. The method employed was to dilute the serum tenfold with water and then add dilute acetic acid to it until the major part of the first precipitate which consisted of globulins had redissolved. A small precipitate of a nucleo-proteid still remained, and this was rapidly filtered off, dissolved in dilute alkali, and tested for antitoxin. It was not found to possess antitoxic properties.

In a recent paper, C. J. Martin<sup>1</sup> has shown that crystalloids may be rapidly separated from colloids, if a solution containing them both be filtered, under high pressure, through a film of gelatine, through the interstices of which the smaller molecules of the crystalloid can pass, while the larger molecules of the colloid are held back. I therefore applied this method to antitoxic serum in the hope that if the antitoxin were not a proteid its molecule might be small enough to enable it to pass through such a filter and thus render possible its complete separation from all proteid. From the serum a clear watery filtrate was obtained, which was, however, found to be devoid of antitoxic power, and thus again the supposition that the antitoxin is a proteid was further confirmed.

We see, then, that most of our present knowledge tends towards this latter view, but there is one fact known which is against it, and which when thoroughly confirmed will lead

<sup>1</sup> 'Journ. of Physiol.,' vol. xx, p. 364, 1896.



to most important consequences. In 1894 Smirnow<sup>1</sup> described some experiments in which he had submitted a solution of diphtheria toxin to the action of an electrical current. As a result of such treatment he found that the toxin had become converted into an antitoxin, and that the strength in antitoxin was in proportion to the initial strength in toxin. In a later paper<sup>2</sup> he confirms and extends his previous results, showing too that the change from toxin to antitoxin goes on more rapidly at the negative than at the positive pole. He found that to produce the best results in experimenting upon rabbits, it was necessary to pass the current for a longer time than if the solution were afterwards to be used upon guinea-pigs. This most striking result has been confirmed by Krüger,<sup>3</sup> who, in order to prevent electrolysis of the salts, employed unpolarisable electrodes. He used a constant current yielding 0.19 milliampères per square millimetre of transverse section, and found that the change occurred both at the anode and kathode. An analogous result has also been obtained by Bonome and Viola,<sup>4</sup> in working upon virulent cultures of streptococcus, though here the production of antitoxin was not so striking. Further confirmation is forthcoming in the experiments of d'Arsonval and Charrin,<sup>5</sup> who have obtained similar results both for cultures of pyocyanus as well as for diphtheria bacilli. They obtained the same production of antitoxin in all cases in which they used the constant current, or an intermittent current whose direction was not varied, or again with an alternating current of high frequency.

From this brief account of the present state of our knowledge of the chemical nature of antitoxins we see the nature of the many difficulties that have still to be overcome before we shall be in a position to effect their isolation.

<sup>1</sup> Smirnow, 'Berl. klin. Woch.', 1894, S. 683.

<sup>2</sup> Smirnow, *ibid.*, 1895, S. 645 and 675.

<sup>3</sup> Krüger, S., 'Deutsche med. Woch.', 1895, S. 331.

<sup>4</sup> Bonome u. Viola, 'Centrlb. f. Bakt. u. Par.', Abth. 1, Bd. xix, S. 849, 1896.

<sup>5</sup> D'Arsonval et Charrin, 'Comp. Rend. Soc. de Biol.', sér. 10, t. 3, pp. 96, 121, and 153, 1896.



# SOME CASES OF HYDRONEPHROSIS.

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HYDRONEPHROSIS is a disease of the kidney which rarely attains the development met with in the cases which are recorded here. If we accept the definition of the condition as a distension of the kidney with fluid caused by an obstruction to the flow of urine, the third case, in which the enormous accumulation of urine took place behind the kidney, should not be included. The term traumatic hydronephrosis has received sanction from long usage, but the difference between the two is quite evident on reading the cases. For in the latter there is no cyst wall, the urine being prevented from extravasation by the condensation of the cellular tissue around. There is, however, an exception to this statement, and that is when the hydronephrosis has ensued in consequence of an injury to the ureter which has caused a partial obstruction.

The congenital causes of hydronephrosis are numerous, and some of these may help to produce the condition in adult life; but it is not easy to imagine how such a one as inadequacy of the ureter to carry off the urine from its kidney should produce a tumour requiring surgical interference for the first time in the adult, unless there has been added some further obstruction in consequence of inflammation or displacement of the kidney.

Newman<sup>1</sup> has collected a total of 665 cases in which the cause was an acquired one; tumours of the pelvic organs causing pressure on the ureters were the causes in 184, stricture of the urethra and enlarged prostate in 234, tumours or abscesses of pelvic organs leading to torsion of the ureters in 32, renal calculi in 68, displacements of the kidney in 17, tumours of the bladder in 10, and bands and adhesions in 12.

As a rule it may be taken for granted that the majority of cases which the surgeon is called upon to treat are the result of obstruction from kinking of the ureter, or renal calculus. It is a not infrequent complication of moveable kidney, and many of the cases which were treated for renal calculus in the earlier days of nephrolithotomy, and in which no stone was found on exploration, were cases of hydronephrosis. I recollect the case of a young man, aged about 30, who was under my care in the Royal Free Hospital seven or eight years ago suffering from recurring paroxysmal pains in the right kidney. The symptoms were not considered to point conclusively to calculus, but exploration was advised and carried out. The pelvis of the kidney was found to be enlarged and distended with urine; no stone was present, but the operation cured the man, probably by fixing the kidney. Some years later I heard that he continued well, and was free from pain. A similar experience was afforded by another case, also a male, transferred to my care by one of my medical colleagues at the same hospital. In both the cause was probably a kinking of the ureter as a result of renal displacement, a cause far more common in the female. Tuffier made experiments on dogs; he rendered the kidney moveable, and then fixed it in its new position: hydronephrosis resulted in several instances. It is probable that kinking of the ureter as a result of undue mobility was the cause of the disease in the first case, whilst the cause in the second was malignant growth in the ureter, as proved by post-mortem examination some months later. It is possible that the difference in the morbid anatomy of the two specimens removed was due to their rate of development. In the first case there was a

<sup>1</sup> 'Surgical Diseases of the Kidney,' p. 114.



slowly acting obstruction, and a general gradual dilatation of the pelvis took place, which obliterated all irregularities of its interior and transformed the kidney into one large cyst with islets of renal substance on its surface. In the second case there was a more rapid distension of the pelvis of the kidney, and from the nature of the obstruction there must have been an increasing hard pressure, so that the weakest part yielded, and the kidney was only partially destroyed.

Other renal diseases which may be mistaken for it are hydatid, simple cyst, or pyonephrosis. Hydatids of liver or spleen may be mistaken for it, whilst in the female several operations have been done under the impression that the tumour was an ovarian cyst. The diagnosis is usually easy.

In the early stage, as I have shown, it is possible to cure the condition by fixing the kidney if a kink in the ureter is the cause. If a calculus is impacted in the ureter, its removal will effect a cure in the early stages if not in the later.

The removal of a hydronephrosis is as easy as the removal of an ovarian cyst which has contracted adhesions if the surgeon is careful to get to the cyst wall before he commences to separate it. Of course it is imperative that the remaining kidney be in a satisfactory state; sometimes this can only be determined by abdominal exploration.

In the traumatic variety incision of the cyst will not always be followed by the success which obtained in the third case here recorded; not infrequently it will be necessary to remove the kidney later, on account of a persistent fistula. This is usually an operation of considerable difficulty and severity, because of the firm adhesions which surround the organ.

CASE 1. *Hydronephrosis ; nephrectomy ; recovery* (from notes by Mr. Hopkinson, dresser).—Geo. B—, æt. 52, a grocer living at Landport, near Portsmouth, was first admitted under the care of Dr. Ord in George Ward, and transferred to Albert on March 18th, 1895.

For three or four years he had complained of slight pain in the right loin, and for some six months of pain in the

abdomen. On January 5th he had an attack of severe pain in the right loin, and was unable to sleep during the night. A swelling was found in the abdomen on the following morning by his doctor. The pain did not shoot, but was constant in one place. The urine was normal, and there was no jaundice.

On admission to the medical ward there was a multilobular tumour situated in the right side of the abdomen, but crossing the middle line by about three inches. Dull on percussion. Resonance was found between the tumour and the costal margin, and between it and Poupart's ligament and the symphysis pubis. The dull area merged into that of the liver area and of the spinal muscles behind. Fluctuation and thrill were easily obtained. No pain or tenderness. Urine, sp. gr. 1024, acid, some blood-cells, one or two granular casts, and a heavy trace of albumen. General condition satisfactory. Whilst in the medical ward the swelling was aspirated and some pints of fluid withdrawn; this, however, re-accumulated.

March 19th.—Urine contained no albumen. At 4.30 p.m. the tumour was removed through a lumbar incision. When the cyst was reached it was partly emptied with a trocar and cannula, then gradually drawn out as the wall was separated from surrounding adhesions. These adhesions were dense in one or two places, and required division; they were most dense in the neighbourhood of the pelvis of the kidney. The vessels and ureter were ligatured separately, but the former were small. The fluid removed from the cyst measured over 103 oz. when collected, contained a trace of albumen and urea, and was strongly acid. The wound was closed with deep and superficial sutures, a drainage-tube being inserted.

Examination of the parts removed showed a complete cyst with scattered islets of kidney substance on the wall in various directions, the appearance being that of a coloured group of islands on a map of modern make.

20th.—There has been free discharge into the dressings. Temp. 96°, and only 4 oz. of urine passed.

21st.—Still free discharge. Temp. normal. Urine 9½ oz. in twenty-four hours.

25th.—Discharge chiefly blood. Urine, 38 oz., sp. gr. 1022, no albumen.

April 6th.—Evidently some sloughing of cellular tissue, foul purulent discharge, but without rise of temperature. Some difficulty was complained of in micturition, but there was no evident cause for it.

20th.—A large slough came away this morning. He got up for the first time on April 30th, and left on May 8th quite well.

CASE 2. *Hydronephrosis ; nephrectomy ; cause uncertain. No evidence of malignant disease when in hospital ; death later from carcinoma (? secondary growth) in ureter.*—W. T—, æt. 52, a shipwright, was sent to me by Dr. Way, of Landport, in consequence of the good result which followed operation in the former case. (The following is abstracted from the notes by Mr. Brown, dresser.) His father was troubled with gravel for years before his death. No history of phthisis or of carcinoma in the family. He was born and lived for twenty-one years in Devonshire. About the age of forty nervous debility set in, and lasted for twelve months, and he often got so nervous that he was unable to work. He recovered to a great extent, but had ever since been very nervous. He complained some months ago of thick urine, which became better on treatment by his medical attendant. He has suffered from varicose veins of the legs, also from piles, but has not had syphilis, and is a temperate man.

About the middle of April, 1895, he began to suffer from pains in the small of the back on the right side, passing round to the front; the pain was of a severe griping character, and if he had gone to bed when the pain came on he was obliged to get up until he had passed wind, which relieved him. After a time he began to feel pain also during the day. Under treatment he lost his pain to a great extent, but began to lose flesh and appetite. For the last fortnight has been unable to sleep unless a sedative draught was given. He has also suffered much from “wind” the last week.

When admitted on June 13th, 1895, he was a healthy-

looking man, complaining of pain in the right side of the abdomen, and of a swelling which had been noticed for three weeks.

On examination the right side of the abdomen is greatly swollen, and a tumour is felt extending from the costal margin nearly down to the umbilicus, then curving round parallel with the right groin it passes towards the back. Percussion note is quite dull over the whole of this tumour, but a well-marked fluid thrill is to be made out on palpation. The swelling causes bulging in the right loin, and dulness extends to the spine. There is a general smooth surface and no great resistance. The measurements are as follows:—Girth at the umbilicus  $38\frac{1}{4}$  inches, across the most prominent part of the tumour 39 inches. From the anterior superior spine on the right side  $20\frac{1}{2}$  inches, and on the left side  $18\frac{1}{2}$  inches. No change has been noticed in the condition of the urine; it is now sp. gr. 1023, acid, with a slight trace of albumen; no sugar, blood, or pus; bowels rather constipated; tongue clean; temp.  $97^{\circ}$ .

June 15th.—Urine, sp. gr. 1010, one twentieth albumen. He complains of flatulence.

17th.—Urine, sp. gr. 1020, trace of albumen. Complains of gnawing pains in the side which prevent him from sleeping.

On the 19th he was examined by Dr. Hawkins, who agreed with the diagnosis of hydronephrotic cyst, and added what was important from the subsequent history of the case, "no other disease."

On June 21st the tumour was exposed through a lumbar incision, tapped, and about 90 oz. of fluid (urine) removed. The cyst and portion of kidney were then separated with some difficulty from surrounding attachments and drawn through the wound. The vessels and ureter were secured with separate silk ligatures and the kidney removed. The lumbar fascia was drawn together with five silk sutures, and silkworm gut used for the muscle and superficial layers. A drainage-tube was inserted and cyanide dressings applied.

The cyst had formed in connection with the lower third of the kidney, the kidney structure having quite disappeared, leaving no trace in the cyst wall. The remaining part of



the kidney was enlarged, but appeared quite healthy. Generally the cyst wall was firm and white, separating before the finger during the operation of removal without difficulty, but occasionally the attachments were firmer, and required division. But little blood was lost, and the amount of shock was moderate. The anæsthetic was ether.

On July 11th the tube was taken out, but there was some purulent discharge, and the evening temperature was usually  $100^{\circ}$  to  $101^{\circ}$ , so it was re-inserted for some days longer.

Before operation the quantity of urine measured was as follows:—June 15th, 56 ounces; 16th, 39; 17th, 45; 18th, 40; 19th, 33. After operation: 23rd, 33; 24th, 25; 25th, 23; 26th, 18; 27th, 40; 28th, 35; July 1st, 48.

He died some three months later, and Dr. Way, who attended him, was able to make a post-mortem examination, the result of which he kindly sent me. There was carcinoma of the liver, and a growth in the ureter on the right side, but it was not possible to say which was primary; the probability is that the ureteral growth was secondary.

CASE 3. *Traumatic hydronephrosis; incision; recovery* (from notes by Mr. Miller).—J. W—, æt. 48, a gas stoker, was admitted to Albert Ward on September 3rd, and discharged on October 28th, 1896.

He gave the following history. On July 28th of this year he was trying to stop a runaway pony and trap, when the bridle of the pony broke in his hands and he fell, the wheel of the trap passing over his body. A few hours afterwards he was admitted to the hospital with fractured ribs and abdominal injury, but was discharged on August 10th, apparently well. There had been no blood in the urine or other evidence of injury to the kidney. After leaving the hospital he became worse, and obtained admission to the Wandsworth Infirmary, when a large swelling in the left side developed, and he was transferred to St. Thomas's.

On admission he was a healthy-looking man, complaining of a large swelling in the left side of the abdomen, and of much pain in that situation. On examination there was a

large fluctuating tumour with well-marked thrill occupying the left side of the abdomen. This swelling, which is dull on percussion, the skin over which is stretched, smooth and shiny, extends from the tip of the eighth costal cartilage to the umbilicus and beyond the middle line, from that point to just above Poupart's ligament back to the flank and loin, and can be felt almost as far as the vertebræ. The dulness over the ribs extends from the fifth interspace downwards in the mid-axillary line. The tumour is not affected by respiration. Urine normal. No evidence of disease elsewhere.

On September 7th the swelling was aspirated in the left loin, and five pints six ounces of urine drawn off, straw-coloured, and without any blood. Collodion was applied to the wound. On the 12th there was a return of the pain, and the swelling was increasing in size, so that on the 14th it was as large as ever and very painful. The quantity of urine passed on the 13th and 14th September was 28 oz., and from the 15th to 16th, 30 oz.

On the 17th a lumbar incision was made over the cyst, and its contents readily flowed away, but as the cyst wall was very friable, and tore easily, the cannula was not used for many minutes. More than eight and a half pints of urinous fluid similar to that previously withdrawn were collected. The wall of the cyst was very thin, and hardly separable from the cellular tissue around it; indeed, it appeared a mere condensation of this, and easily gave way during an attempt to remove it. The kidney had been pushed forward by the cyst, and occupied a position under the umbilicus and over the front of the spine. It appeared to be rather large, but presented no irregularity on the exposed surface, or sign of previous rupture, nor could any be found in the ureter. A thorough examination was made, but no opening could be found. A large drainage-tube was inserted after partial closure of the wound with silk sutures.

He complained of much pain during the night, but was able to pass urine, though the quantity was diminished, being 12 oz. for the 18th; 13 oz. for the 19th; 28 oz. for the 20th; 36 oz. for the 22nd.

On September 30th the temperature, which had been satisfactory, rose to  $103^{\circ}$ , and some pus was found in the wound on the following day, but by the 10th the tube was removed and the wound soon closed. The amount of flow from the wound was not excessive at any time. He left hospital on October 28th, and has continued well.

The removal of a hydronephrotic kidney is usually required when the disease has advanced so far as to cause the presence of a tumour to be noted. The cases are extremely limited in which a communication between the cyst and the ureter below the point of obstruction is possible.





## SOME UNUSUAL MANIFESTATIONS OF CHRONIC URÆMIA.

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THE interest of the following cases lies in the fact that they illustrate the extreme difficulty in diagnosis which may occur in connection with some of the unusual manifestations of the uræmic condition. In one instance a confident diagnosis of gastric ulcer was made. In one the malady was mistaken for disseminated sclerosis, and, indeed, the patient was used in the clinical part of one of the higher examinations as an example of that disease, and was as such diagnosed by the candidates. In one, the last case reported, the existence of a cerebral tumour was long suspected. The cases were all under observation at the hospital; the presence of albumen in the urine, as demonstrated by boiling and the nitric acid test, was far from constant, and when found it was always in very slight amount. In each instance the presence of a renal lesion and the absence of the lesion erroneously suspected were fully demonstrated by post-mortem examination.

CASE 1.—An unmarried woman of 34 came under observation in April, 1897, with the following history:—She had

an attack of scarlet fever when four years of age, but there was apparently neither then nor later any suspicion of renal trouble. She was subject to colds, and gave a history of slight hæmoptysis in the winter. In 1891, and again in 1894, she attended as an out-patient, and was supposed to be suffering from gastric ulcer. At times she vomited small quantities of blood. Seven weeks before admission she was seized with diarrhœa, sickness, and severe abdominal pain, taking to her bed, where she remained until admitted to hospital. During this period she vomited blood, but never more than two tablespoonfuls at a time, and within a few hours of her admission to hospital she again vomited about three ounces of bright blood. The abdomen was rigid and tender; there were no signs of disease of heart or lungs. The urine, which was retained, had a sp. gr. of 1024, and contained no albumen. A diagnosis of gastric ulcer was made, and the patient treated accordingly, rectal feeding being adopted, and only ice allowed by mouth. Under this treatment the vomiting ceased.

Five days after admission the patient began to get drowsy; the urine still contained no albumen, but gave a reddish coloration on addition of ferric chloride. There was no sugar. The breath was offensive, tongue dry and brown, bowels confined, skin very dry, and urine again retained. The ocular fundi were normal, and the knee-jerks could not be obtained. Sterilised water up to 60 c.c. daily was injected into the subcutaneous tissues, but no improvement resulted. On May 2nd a trace of albumen was detected in the urine, and control over the sphincters was lost; the temperature had risen to 100° F. Two days later the urine contained blood, and was ammoniacal. The next day the patient died, remaining comatose to the end. The day before death twenty-one ounces of urine were passed.

*Post-mortem.*—There were neither ulcers nor cicatrices of stomach or of intestine. The kidneys were very full of blood. The boundaries of the pyramids swollen, the cortices slightly swollen, and occupied by many small dull yellow wedge-shaped areas of fatty change. These fatty areas were uniformly distributed throughout the kidneys. Capsules non-adherent and not thickened. The heart was

wasted, weighing only six ounces. There were no other pathological changes. Microscopically the kidneys were much congested, the glomeruli and intertubular vessels being packed with blood-cells. The epithelium of the convoluted tubules was granular, degenerating, and in parts shed. There was slight infiltration of the interstitial tissues.

CASE 2.—A. J. N—, æt. 13, for a short time a printer, first admitted June 29th, 1892; died November 27th, 1896.

Father rheumatic. Mother died at age of thirty-four in confinement. No history of phthisis. Patient the only child now living. After his birth followed four miscarriages, each at the fifth month.

*Previous history.*—Apparently quite healthy in infancy; measles and bronchitis when four years of age, otherwise health good until present illness. No history of alcohol.

Six weeks before admission he had an attack of sore throat and shivering, which was followed by the passage of claret-coloured urine without increased frequency of micturition. Shortly afterwards the abdomen began to swell, and a week before he came in hospital  $9\frac{1}{2}$  pints of serum were removed by tapping. The legs did not swell, but a small petechial rash was noticed on them.

On examination the abdomen was distended and contained free fluid; the veins on its anterior wall were enlarged, the liver could be felt a finger's breadth below the costal margin, and the spleen was slightly increased in size. The percussion note at the lung bases was impaired, but there were no other signs of intra-thoracic disease. The urine contained much blood, a quarter albumen, and a very few epithelial and blood-casts. A petechial rash was present on the legs around the hair-follicles. There were no changes in the corneæ or fundi of the eyes, and no signs of congenital syphilis. The temperature on admission was  $103\cdot2^{\circ}$  F., the patient shivering, but fell to normal the next day, and did not again become febrile. A subsequent examination of the blood showed no abnormality. On July 10th  $7\frac{1}{2}$  pints of serum were removed from the abdomen; the liver was then felt projecting just below the ensiform cartilage; it was very hard, and its surface irregular; a

distended gall-bladder could occasionally be felt. The spleen projected a hand's breadth below the costal margin, and abdominal pain, chiefly on the left side, was complained of. The urine still contained blood, albumen, and a very few casts; during the first week of observation the average daily quantity was 21 ounces. By August 21st the blood and albumen had disappeared, and the average quantity passed daily was 32 ounces. The boy was discharged on September 14th in fair general health.

He was again under observation in hospital in April, 1896 (nearly four years later), complaining then of abdominal discomfort and shortness of breath. The liver had not altered in size, but the spleen now reached as low as the umbilicus. The boy was very anæmic, and hæmic murmurs were present at the base of the heart and in the neck. The blood showed no disproportion of red and white cells; the gums were spongy and inclined to bleed; the urine constantly contained a trace of albumen; the temperature was normal. He was treated with iodide of potassium.

Readmitted in September. His general symptoms were as before, but in addition his movements were very tremulous, and slight nystagmus was thought to be present. No albumen was found in the urine this time. He was discharged on September 30th, and attended as an out-patient until October 23rd, when he was readmitted. His condition was as follows:—Expression vacuous; very emotional at times; saliva dribbled from the mouth; gums spongy and bleeding; fauces congested and clogged with sticky mucus. Intention tremors were well marked, it being almost impossible for him to button his clothes or execute other co-ordinate movements; he could not even sit up in bed. The head and neck showed the tremors, the voice was reduced to a whisper, and his speech was tremulous and indistinct. There was no actual loss of power in the extremities, no wasting, and no anæsthesia. The knee-jerks were much increased, the legs readily became rigid, and doubtful ankle-clonus was noted. Distinct nystagmus accompanied the outward movements of the eyes; the pupils were somewhat eccentric, but reacted to light and in accommodation. The fundi showed deep, pale, physiological cups, but no



pathological change. No abnormal signs were present in the lungs ; expectoration consisted of viscid saliva mixed with blood from the gums and fauces. The heart's action was regular and feeble. In the abdomen the liver could not be felt, but the spleen extended still to the umbilicus. The urine contained albumen almost constantly in small quantity, and occasionally some blood-cells and triple phosphate crystals.

On November 22nd the temperature, which had hitherto been rarely higher than 99° F., suddenly rose to 104° F., and at the same time the pulse-rate quickened, and the patient became stuporous. This condition continued until death on November 27th.

*Post-mortem.*—The liver was in a condition of advanced cirrhosis, its surface injected and uniformly tuberculated, and its section presenting the usual network of translucent connective tissue embracing islets of bile-stained liver substance. The spleen was large and adherent, it weighed 34 ounces, and apart from its size its appearance differed but little from normal. Both kidneys were enlarged and injected ; the left presented numerous radiating suppurative striæ extending into the cortex, whilst in the right the suppuration was limited to a few foci ; the ureters and pelves were healthy, as also was the urinary bladder. A thin layer of necrosis covered the pharyngeal wall, and the larynx was deeply injected, its tissues swollen, and the cords a little ragged. The lungs were œdematous and hæmorrhagic, and the right pleura inflamed. The brain was soft and hyperæmic, but no evidence of disease was found on naked-eye and microscopical examination ; the cord also appeared healthy. The peritoneum was dry, but there was no very obvious development of anastomotic venous channels.

CASE 3. F. T—, æt. 25, general servant, single. This patient was subject to rheumatism and winter cough. Four years before admission she was said to have had hæmoptysis, bringing up nearly a pint of bright blood. For the past two years she had noticed shortness of breath. Ten weeks before admission, being seized with vomiting and headache,

she took to her bed. A fortnight later she developed tremulous movements of the arms and legs with subjective sensations of pins and needles. Her headache lasted with remissions until she came under observation, but the vomiting ceased.

When admitted there were continuous slight rotatory movements of the arms, and movements of flexion and extension in the legs. The arms and legs were analgesic; the former up to a point a little above the elbow, and the latter to a point a little above the knee. The knee-jerks were brisk, and ankle-clonus was obtained. There was early optic neuritis with a little retinal exudation. The urine was of sp. gr. 1020, and contained no albumen. The temperature was normal. The limb tremors were variable, and distinctly worse when the patient's attention was drawn to them. On some days they were quite absent. Headache continued to be much complained of, but vomiting was only occasional. Cramp-like pains in the legs were sometimes present. There were several intercurrent attacks of follicular tonsillitis, and during one of these in the middle of January a trace of albumen was for the first time discovered in the urine. By the end of January the anæsthesia had disappeared, but the patient was noisy, delirious, and subject to delusions; the urine still contained a trace of albumen, and varied in sp. gr. from 1020 to 1032. The headache was now more intense and vomiting still occasional. Bromide and chloral failing to alleviate this, injection of morphia was resorted to with the best results; antipyrin, which was substituted for the morphia, was less efficacious. The albumen now disappeared from the urine, but a trace reappeared in March and was persistent. Re-examination of the eyes showed that the discs were still hazy, a few patches of exudation were present, and in addition there were some small hæmorrhages and white spots near the macula lutea. In April another attack of tonsillitis occurred, and morphia with atropine was again resorted to on account of headache, but appeared to aggravate the vomiting. The arm tremors were still present, and it was thought that the left limbs were weaker than the right, and also that sensation was blunted on the left side only. In the intervals

between the attacks of tonsillitis the temperature was a little subnormal.

The patient was readmitted nine months later. She had been subject to vomiting ever since her discharge, and for two weeks the headache had recurred. She stated that on the day of admission she had brought up about a teaspoonful of dark blood. The urine now contained one third albumen and much epithelium, but no casts. Tremors like those of disseminated sclerosis were present in the arms. The triceps and knee-jerks were brisk, and ankle-clonus was present. Epigastric pain was complained of; the tongue was raw and dry, the breath very foul. A few days later blood appeared in small quantity in the urine; the reaction was alkaline, and crystals of triple phosphate were present.

A short convulsive seizure occurred on April 21st, and was repeated on several occasions. The patient was vomiting everything, and pilocarpine failing to act, a hot air bath was given with excellent result. In addition to the papillitis before observed the retinæ were œdematous, and several hæmorrhages were still seen in the yellow-spot region. The patient was restless and sleepless, refusing food, and passing very little urine. The bowels were very relaxed, although latterly no purgatives had been given. The urine contained three quarters albumen, but no casts. Coma finally supervened.

*Post-mortem.*—The lungs were much congested, and contained small hæmorrhagic patches. The left ventricle of the heart was moderately hypertrophied and dilated. Both large and small bowel were extensively ulcerated, the ulcers in the ileum being covered by sloughs which were all but continuous. The kidneys were small and deep red, with adherent capsules, granular surfaces, and wasted cortices. The vessels at the base of the brain were atheromatous. There was only one vertebral artery, and this the seat of advanced atheromatous change. Minute patches of softening were found, one in the outer part of the left ventricular nucleus, and another in the middle of the pons.

The conclusions which appear to be warranted by the preceding cases are—

1. That hæmatemesis with epigastric tenderness and pain, aggravated by the ingestion of food, are not necessarily diagnostic of gastric ulcer, but may occur in certain cases of uræmia.

2. That the simulation of gastric ulcer is rendered more complete by the facts (*a*) that such uræmic manifestations may occur in young women, and (*b*) that in some cases presenting such symptoms albuminuria may be temporarily absent.

(These two conclusions are also borne out by other cases personally observed. These have not, however, been reported, since they terminated in recovery, and therefore the absence of the ulcer could not be definitely proved. The renal lesion in these cases was, however, beyond dispute.)

3. That tremor, in all respects resembling that of disseminated sclerosis and accompanied by increase in the reflexes, may be a manifestation of the uræmic condition.

4. That a gross renal lesion producing uræmic manifestations may be for long periods of time associated with urine which is free from albumen.

For permission to make use of the preceding cases I am indebted to Dr. Payne, Dr. Sharkey, and Dr. Turney, under whose care they were.



THREE CASES  
OF  
PYOGENIC ABSCESS OF THE FRONTAL  
LOBE.

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By F. C. ABBOTT, M.S.LOND., F.R.C.S.

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THE three cases of abscess of the frontal lobe here recorded are all instances of large single septic abscesses of slow formation, secondary to infection derived from lesions of the frontal bone or the immediate adjacent cribriform plate, and uncomplicated by general septic meningitis.

The infection in the first case was derived from an acute infective osteomyelitis of the vertical portion of the frontal bone. There was no history of injury and no external wound, and the most probable site of entrance of the bacteria was a purulent affection of the upper eyelid on the same side.

In the second case the abscess was due to a small compound fissured fracture of the vertical plate of the frontal bone without wound of dura mater, which had been treated originally in another hospital and discharged as cured. This fracture subsequently becoming infected, the case closely resembles the previous one in its ultimate pathology.

The third abscess followed on an extensive compound depressed fracture of the vault and base, the external

wound of which ran an aseptic course, and for which the infection was probably derived from organisms at the roof of the naso-pharynx.

Two of the cases I had the opportunity of watching throughout, while the third (Case 2) showed no signs of the abscess till after admission, though it was probably already in course of formation.

*The history* in the first case is a short one, as it is only two days after the abscess, due to acute necrosis of the frontal bone, was opened that slow pulse, subnormal temperature, and drowsiness were noted.

Although it is interesting to notice that these symptoms, which so far alarmed me that I had the eyes examined and spoke of cerebral abscess in the notes, abated so entirely that twelve days later I presented her for discharge, I think there can be no doubt from the subsequent history that the abscess had already begun to form.

So slowly, however, did the symptoms increase, that it was not till twenty-four days from their first commencement that we made up our minds to operate, the abscess by this time containing 2 to 3 oz. of pus.

In Case 2 the actual commencement of the abscess must be doubtful, but it was fifty-two days after the original fracture, and ten days after his admission to St. Thomas's for a septic condition of the wound, that mental change was observed. The symptoms once having shown themselves developed rapidly, and within a week from this time operation was undertaken.

If we may assume, as I think we may, that the slight changes noticed in Case 3 before his discharge to Swanley were due to abscess formation, we have a period of forty-five days before any signs declared themselves. These symptoms rapidly increased during his absence, and the brain was explored on the sixty-second day after receipt of the injury.

*The symptoms*, in all the cases slight at first, became progressively more marked, and form a definite group quite sufficient in themselves to lead to a correct diagnosis. Thus though I failed in one to strike the abscess, and was stopped from exploring further in a second by finding a

large extra-dural collection which I thought sufficiently accounted for the symptoms, they were all operated on under the assumption of the true condition.

The three symptoms that we found most important are the mental condition, the pulse, and the temperature. The two latter of course need a careful continuous record for some days before much weight can be attached to them, but certainly in two of the cases they gave definite warning of the abscess before there was the least mental change, while in the third their value was masked by the coincident septic condition.

The mental condition is one of progressive gradually increasing drowsiness, the patient at first being merely listless and less lively than usual. For a long time the girl (Case 1) continued to read books and to talk quite freely after I had noticed that she did not seem so well. She took less interest in the work of the ward around her, and slept more, but still at times when awake appeared perfectly normal.

Then she still kept to her book by force of habit, but it used often to lie open beside her unused, until finally it was given up altogether.

A similar change took place in Case 3, and from being a very popular and amusing inmate of the ward he was thought to be rather morose and sullen before being sent to a convalescent home.

This condition gradually deepened until the patients were always asleep unless roused, but even then would take food when told to do so, answer when spoken to, and do as they were told,—at once, however, relapsing into their previous condition.

Cases 1 and 3, in fact, passed for a time a regular "vegetable" existence. Only one case complained of headache, the others seemingly having no pain, and as long as she answered at all the girl always said "Oh, I'm all right."

It was not till quite the last that the drowsiness became coma and food was refused, and it was not till this stage that the evacuations were passed into the bed.

*The pulse*, constantly slow, varying a good deal in rate but frequently dropping to 50, and never rising to normal,

was very suggestive. The rhythm was occasionally irregular, beats being either altogether dropped or of greatly diminished force, and this was specially noticeable when the patient was moved. Otherwise the character of the pulse showed nothing peculiar, and, strong at first, it gradually became weaker with the condition of the patient.

*The temperature*, nearly always between  $96^{\circ}$  and  $98^{\circ}$ , and never rising above normal, was equally noticeable, especially in the cases where from the concurrent inflammation one would have expected an opposite condition.

*Headache* in only one of the cases (Case 3) was complained of at all, but here it was very severe, and the man when he was semi-conscious scratched a nasty sore on his vertex, where he had always located the pain, so we may assume it was still present.

*Optic neuritis*.—There was no sign of papillitis in any of the cases throughout, although it would *primâ facie* have been expected to be present, especially in the case with a severe fracture of the base through which the infection reached the brain, and which involved and affected all the motor-oculi nerves on that side. The explanation is no doubt to be found in the P.M. reports, in which it is stated in all that there was no basal meningitis. It is, too, well known that affections below the tentorium more often cause optic neuritis than those above.

*No paralysis* or even paresis, either of limbs or ocular muscles, was met with, as probably these slow-forming thick-walled abscesses in the brain cause but slight if any increase of intra-cranial pressure, simply taking the place of the brain tissue they break down. The nerves of the orbit would also be protected from direct pressure or implication by the lesser wing of the sphenoid and the higher level of the anterior fossa over which the abscesses lay.

An exception must be made in Case 3, where all the right oculo-motor nerves were affected. These, however, were directly implicated in the fracture, and their involvement was immediate; and that their paresis had nothing to do with the abscess is shown by their progressive recovery as the cerebral abscess enlarged.

They were probably involved in hæmorrhage at the



sphenoidal fissure across which the fracture ran, as was thought most likely at the P.M.

*Aphasia* was made out only in Case 1, and here it was obviously due to the large collection of pus found post mortem between the dura and the cerebral cortex, and flattening both the frontal and parietal lobes, and had no direct connection with the abscess.

In Case 2, where the abscess was also on the left side, aphasia was not detected, though I should not like to say it was not present, but the man's mental state did not allow us to decide.

*The reflexes*, both deep and superficial, were normal.

*Constipation* was present but not very obstinate in all the cases, and control over the sphincters was retained until the deep coma of the final stage.

*The tongue* was thickly furred and the breath foul, and it was interesting to see how completely the tongue cleared in Case 1 on the evacuation of the abscess, to become bad again as further complications supervened.

*The diagnosis* in each of these cases was made from the above symptoms. The difficulty is rather to make the diagnosis early enough, and to be sure that any serious pathological lesion exists than to distinguish the exact condition.

As we have mentioned before, even when we were on the *qui vive* in the case of the girl, and having recently had the opportunity of watching the other two cases, so much did she for a time improve, that we were on the point of sending her out even after a strong suspicion of cerebral abscess had crossed our minds. The objective signs were so slight that when her pulse and temperature for a time improved there was nothing left to go on but her mental condition, which at this early stage was only a matter of comparison with her previously observed normal. Then in all our cases we had a definite exciting cause to guide us, but it must not be forgotten that abscesses here will from time to time arise in which the cause is much less obvious. Such causes would be frontal abscess due to necrosis of the bone on a much smaller scale, and apt to be overlooked, punctured fractures of the roof of the nose or orbit not diagnosed, obscure cases

of suppuration with baring of bone in the frontal sinuses or ethmoid cells, or invasion of the bones of the base by new growths of the naso-pharynx or orbit. In all doubtful cases the careful observation of pulse and temperature will be our best help.

The differential diagnosis from septic abscess in other parts of the brain does not concern us here, but the generally patent exciting cause combined with the localising symptoms of each, symptoms in which a large abscess situated here is alone entirely deficient, should make the question an easy one.

The distinction from the much more common spreading septic inflammation of the meninges presents no difficulty ; the rapid course, high temperature with frequently a rigor at the onset, rapid pulse, headache with intolerance of light and rapidly deepening coma of this latter being absolutely different.

The only pathological condition likely to be long mistaken for an abscess of the frontal lobe is, in fact, a collection of pus between the dura mater and the bone. This, arising from the same causes, producing the same pressure symptoms, and having the same chronic course, is difficult to separate ; and of course it must be remembered that the conditions may exist together. Thus in Case 2, by being satisfied with opening the large extra-dural collection I exposed, and feeling that it was sufficient to account for the symptoms, I failed to find the large abscess in the frontal lobe subsequently discovered at the P.M.

But in extra-dural collections of pus there is more likely to be puffy swelling over the bone, local tenderness on percussion, headache, and a higher temperature. Fortunately in both cases the indication is equally to explore, and, if the extra-dural collection is found, to wait a few days till the continuance or recurrence of symptoms points to the further mischief, as they would doubtless have done in Case 2 had he lived long enough.

*The prognosis* in the case of these chronic thick-walled abscesses should be good ; the general condition and vitality of two of my cases was remarkable, while the abscess is generally close to the surface, and is relatively easy to

drain satisfactorily. Then the absence of all other intracranial complications, leaving us to deal solely with the isolated abscess, as was proved post mortem in all these cases, should be favorable to successful treatment. The improvement in Case 1 on opening the abscess was immediate and most marked, and had it not been for the unfortunate collection which no doubt formed secondarily between the dura mater and the cortex, she would, I think, have recovered. And had I not missed the abscess in Case 3 through, as mentioned below, what I think to be a fault in technique, he should also have done well.

*Pathology.*—The only point I wish to dwell on here is the usual course of the spread of the infection from its origin in the bone. In none of these cases was it direct, there was no direct implication of the dura mater with consequent adhesion of it to the deeper membranes, and none of the abscesses was a superficial necrosis of the cerebral surface over the point of injury or disease. In all the abscess was centrally situated in the frontal lobe, with a layer of brain substance perfectly normal to the naked eye between it and the surface (except in Case 2, which from its size had reached the surface), and the adhesions of the dura were, I think, obviously secondary. The spread then took place from the vessels of the bone, intimately connected as these are with those of the dura mater, and spread by these either by direct septic thrombosis, or by means of clot carried directly or refluxly along the vessels and perivascular sheaths across the meningeal spaces to the brain.

In Case 3 the dura and brain were wounded, and here no doubt the vessels of the brain may have been directly infected, but even in this case the abscess was not superficial. The danger of cerebral complications is not over, therefore, when the dura mater is found uninjured, and there must always be risk in removing growths which involve the bones of the base, even when, as is usually the case, the dura mater exposed on removing them is found thickened, for the operator is bound to leave freshly cut or scraped bone surfaces just ripe for infection, and in a position where it is almost impossible to keep the parts aseptic.

That this danger is a real one is shown in a case known

to the writer, where septic meningitis followed the operation of removal of nasal polypi and the middle turbinated bones, although not only was the cribriform plate uninjured, but the mucous membrane covering it was quite intact.

In this case the septic process must have spread by the vessels to the meninges.

I much regret that I had not the means immediately to hand to take a cultivation from any of these abscesses, and do not therefore know what were the organisms concerned. The pus in all the cases was greenish in colour and creamy in consistence, and was markedly fœtid in Cases 1 and 3.

*The treatment* resolves itself into so dealing with the primary lesion as to prevent, as far as possible, the occurrence of intra-cranial complications, and the opening and drainage of the abscess when formed. In acute necrosis of the frontal bone the primary surface abscess should be opened without delay. Generally the portion of bone affected is very small, lying along or close to the line of the orbital margin. If, however, as in Case 1, the area of necrosis be extensive, it becomes a question whether we ought not at once to trephine the affected bone, with the double object of setting free the septic products from the probably infected cancellous tissue, and so lessening the chance of intra-cranial spread from the diploic veins, and also of evacuating any pus on the inner surface of the bone where it is obviously likely to be present. Personally I feel sure this ought to be done, from analogy with the treatment of the same disease elsewhere. The possibility in extensive necrosis of there being pus in the frontal sinuses should also be remembered, and if in any doubt they should always be explored. Primary empyemata of the frontal sinuses should also be evacuated as soon as possible, as the possibility of cerebral infection through a bared portion of bone is always present. The analogy to cases of pus retention in the tympanum and mastoid is exact, the frontal sinus forming a similar volcano from which explosions may take place; and, as in the other instance, the danger of a fresh explosion is greater in the chronic cases from the greater vulnerability of the already diseased bone to sepsis.



In the treatment of fractures of the frontal vault there is nothing to add to the usual rules.

When the fracture involves the base the difficulties are much greater. If the fracture involves the orbital roof with an external wound the case is similar to a surface fracture, but it must not be forgotten that by a concurrent fracture of the inner orbital wall we may even in these cases have to guard against septic infection from the nose.

Fractures involving the nasal roof are full of difficulty. Antiseptic plugging of anterior and posterior nares is worse than useless, as the plugs themselves so soon become septic. Cleansing by antiseptic syringing nearly always does harm, especially in semi-conscious cases, from the amount of struggling, coughing, and spluttering excited, which must tend to drive the contents of the upper nares through the fracture.

Externally we can only trust to keeping the nasal passages as dry as possible, so as to render the nidus for organisms less favorable, and have the patient watched carefully to prevent his driving septic matter into the skull by any action such as blowing his nose, which must infallibly tend to do this. It is possible also to promote this drying up by some antiseptic powder carefully applied so as to avoid sneezing.

But since it is impossible to apply an antiseptic dressing on the surface of the skull, it seems to me very important where possible to do so on the inner side.

In compound fractures here, where an exploration is made, this can be easily done, and where a wound in the dura is seen, a plug of gauze should be carefully inserted down to it to cover it from the bone, and left for some days, the end being brought out at the wound.

Many nasal roof fractures can be dressed from above in this way, and I attribute considerable importance to it.

This certainly raises the question whether fractures of the base in this region without external wound should not be treated in the same way by trephining the frontal bone, and inspecting and dressing the nasal roof, especially at the site of any tear in the dura mater.

As regards the abscess, this can be evacuated from the front or from the anterior part of the temporal fossa behind

the external angular process. Probably in cases arising as above the primary opening would always be made from the front, though it might then be found better to make one at the side. The greater depth and the liability to infect the different layers of the temporal fossa are the only things against this route. Had I adopted this plan at the second operation on Case 1, I should have come directly on the intra-dural collection of pus which escaped me from the front. The question of providing more direct and more immediate drainage through the orbital roof should also be considered.

One other point—the actual instrument to be used in opening the abscess. These abscesses are generally very thick-walled and contain thick pus. I undoubtedly missed that in Case 3 simply from using a trocar and cannula, as from the P.M. I must certainly have struck the abscess and pushed its wall in front of me. I believe I should have done the same with any of the “explorers” ordinarily used. The abscess was exceptionally thick-walled, and the brain around soft, and even on the P.M. room table it could only be opened by steadying it and making a sharp plunge with a knife. In any similar case I shall not be content till I have explored with a sharp-pointed narrow knife pushed in sharply, and am sure that if care be taken to keep it in one direction, no more harm will be done by this than by any other instrument.

In Case 1 I used a rubber drainage-tube, shortening it as it was gradually pushed out. In a future case I should feel very inclined to use a gauze plug for drain (removing as much of the anterior wall of the abscess as was necessary) and believe if fairly frequently changed it would cause no more difficulty than a similar drain in the peritoneal cavity. I am indebted to Mr. Mackellar and Mr. Clutton, under whom these cases were admitted, for leaving them in my charge, and to Mr. Fisher for kindly frequently examining and reporting on the condition of the fundi.

CASE 1. *Acute necrosis of left frontal bone ; abscess of frontal lobe.*—M. R—, female æt. 16, was admitted on February 22nd, 1897, with a large abscess in the left frontal region, extending from the right external angular process to the

left superciliary ridge, involving the eyelid and spreading on to the scalp two thirds of the way to the coronal suture. The girl looked anæmic and ill, with furred tongue, foul breath, temp.  $100^{\circ}$ , and pulse 90. Her general appearance corresponded to the diagnosis of acute necrosis, and the only points of interest in the history were that there had been swelling of the left eyelid with discharge of pus from beneath it for nearly three months, frequent attacks of vomiting for some weeks with no relation to the taking of food, and severe frontal headache. The swollen eyelid was evidently the result of purulent conjunctivitis, and had suddenly increased the last week with the abscess formation, and interested me only as a possible source of the infective bone trouble. The other symptoms possibly, but I think not probably, pointed to an already forming brain abscess, but rather led me to think less of the vomiting when it again commenced. The abscess was freely opened on the day of admission, irrigated and drained. The frontal bone was bare from the external angular process to the mid-line, and for some distance upwards from slightly below the orbital margin.

On February 26th it is noted that for two days the temperature has been subnormal, the patient has been drowsy, the pulse is slow ( $60^{\circ}$ — $70^{\circ}$ ), and there has been vomiting of stomach contents several times. The eyes were examined by Mr. Fisher, who reported a slight degree of conical cornea, with much corneal opacity but normal fundi.

The vomiting continued several days, accompanied by drowsiness, but by March 6th the temperature had been normal for two days; the patient was quite bright, and so much better that I quite abandoned my suspicion of cerebral abscess, and she was "presented" to go out in a few days.

Vomiting commenced again on March 11th, after three days of subnormal temperature, and I again became very suspicious of an abscess in the frontal lobe.

From March 11th to March 18th the pulse was uniformly slow, sometimes dropping as low as 50, while the temperature, generally subnormal and never above normal, on two occasions dropped to  $96.6^{\circ}$  and  $96.4^{\circ}$ . There was no headache after the 13th, but great and increasing drowsiness, the patient

always lying with her eyes closed unless disturbed, when she would speak quite rationally and do as she was told, but at once relapsed into her former condition when left alone. There was all this time frequent vomiting, generally of green bilious fluid. There were no ocular or other paralyses, and still no optic neuritis. Complete control over bladder and rectum, with tendency to constipation.

March 18th.—Operation. Temp.  $96.6^{\circ}$ , pulse 50. The head having been disinfected, a large semicircular flap, convex upwards, was turned down by an incision from the right superciliary ridge to the left external angular process. The bone was still bare, but there was now no pus in the previous abscess cavity. A one-inch trephine was applied above the middle of the left orbit, its lower edge being above the orbital roof. The frontal sinus was not opened. On raising the disc of bone, pus was at once seen to ooze from a spot in the thinned dura mater. This having been further opened up by semilunar incision, the pus was seen to come from a small opening in the frontal lobe, where an abscess lay immediately beneath the surface. This opening was freely dilated with forceps, and two to three ounces of foetid creamy and greenish-yellow pus set free. This pulsed freely as it escaped. A medium-sized drainage-tube was inserted to a depth of two inches, where it touched the inner wall of the abscess. A hole was cut in the flap to allow direct exit for the tube, and the flap was sutured with horsehair. Cyanide dressings.

19th.—Temperature rose immediately to normal after operation, and remains so this morning. Pulse 80. Patient says she feels "very fit."

20th.—Much better; pulse and temperature normal, and quite bright mentally.

22nd.—Pocketing of pus found in the upper eyelid. Incision made here.

24th.—The temperature, rising for two days, reached  $101.8^{\circ}$  this evening. An abscess under the flap accounted for this, and was opened. The tube in the brain was pulsating freely, and was shortened. There had been practically no discharge from it except a few drops of blood-stained pus the first two days. There is still no papillitis.



25th.—She vomited again this afternoon, and seems more drowsy.

28th.—Patient has not been so well since last note, and is decidedly more drowsy. Temperature ranges from 100° to 101°, and there has been daily vomiting; while the tongue, which had become quite clean, is again furred. The tube was finally removed from the brain last night, and this latter has commenced to protrude under the flap for the last three days.

31st.—Increased discharge of pus for last twenty-four hours, and the brain protuberance is much smaller. The girl is much brighter, and the temperature for twenty-four hours has been down to 99°.

April 1st.—This evening patient looks worse, she is much more drowsy, and the pulse has dropped to 60. She appears to-night to have difficulty in finding words to express herself.

2nd.—Another exploration made. The old flap was turned down, exposing a fungus cerebri about the size of a small Tangerine orange. On exploring it a few drops of disseminated pus escaped. The fungus was next shaved away, and the under surface of frontal lobe explored as it lay on the orbital roof. Pus welled up briskly from here for a few seconds, but on inserting a drain no more escaped. The flap was again sutured.

3rd.—Pulse has gone up to 84, and there has been no vomiting. She recognises objects, but again has difficulty in finding words.

5th.—Pulse again very slow, drowsiness great, and well-marked motor aphasia present. Although the condition was probably one of spreading septic softening, one more exploration for further or residual abscess was made. A semi-purulent fungus cerebri was removed, and the opening in the bone enlarged with Hofmann's forceps. The brain was everywhere soft and breaking down, but no true collection of pus was struck.

8th.—Temperature continues between normal and 100°, and pulse about 90. There has been a large discharge of pus. Very drowsy, but will answer "Yes" or "No" if roused.

11th.—Patient gradually sank, and died at midday, after increasing difficulty in feeding her. She had not for a long time complained of headache; there was never any paralysis, either ocular or of extremities; the knee-jerks throughout were present and generally brisk, and there was never any papillitis on either side. Control over bladder and rectum was retained till within twenty-four hours of death.

*Post-mortem.*—Body spare but not emaciated. There was a semicircular scar over left frontal bone. The flap thus marked out covered a trephine hole, from which projected a mass of disintegrating brain matter. On opening the dura mater a definite localised collection of pus was found between it and the brain on the left side. This abscess contained several ounces of pus, and was so large that the whole of the lateral surface of the frontal and parietal lobes was flattened and depressed. The collection extended up to the superior longitudinal sinus, but did not involve the under surface of the brain, and was limited by adhesions of the other membranes to the dura mater. There was also a definite abscess cavity, the size of a Tangerine orange, in the left frontal lobe. This opened anteriorly through the fungating mass already described, and had been entirely drained. There was softening around this abscess, but no pus in the ventricles, nor any signs of basal meningitis. There was necrosis on the inner as well as the outer surface of the frontal bones. The other viscera were practically normal.

CASE 2. *Compound fissured fracture of left frontal bone; extra-dural abscess; abscess of frontal lobe.*—J. B—, carman, æt. 40, had been attacked six weeks before admission by three men, who knocked him down and kicked him on the head. He was admitted into Guy's Hospital, where he remained three weeks. On his discharge he stayed at home until he came up to St. Thomas's.

On admission on November 19th, 1894, there was a discharging sinus over the left eyebrow with œdema of eyelid, and so much surrounding redness that he was taken to William Ward. On passing a probe the bone was felt to be bare over a considerable area, and a gap was detected in

the orbital margin. The wound was enlarged and hot dressings applied.

November 20th.—The erysipelas was spreading all over the face.

28th.—An incision was made in the most dependent part of the upper eyelid. Mental condition for the last two days has been much altered. Although once or twice rather violent and restless he was generally very drowsy, only rousing when spoken to, and passed his urine into the bed.

December 2nd.—Fluctuation was felt on the right side between the bridge of the nose and the eye. An incision made here evacuated a considerable quantity of pus, and through the incision bare very rough bone was felt over a wide area. He lay in a semi-comatose condition, but could be roused when spoken to, understood what was said to him, and raised his arm or put out his tongue if required. There was no paralysis.

4th.—The mental symptoms becoming still more marked, immediate operation was decided on. A flap was first turned down over the left frontal bone, which was found bare and rough over a considerable area. A small linear fracture half an inch in length was found just internal to the left external angular process, and from this pus was seen to exude. The bone was trephined near this position, exposing thick greenish pus outside the dura mater. The opening was then rapidly enlarged right across the forehead following up the pus, which was very thick. In this way a portion of bone extending between the two external angular processes just above the orbital roof, and from one to two inches in vertical extent, was removed. The dura mater was found adherent to bone limiting the pus cavity, and was covered with thick granulations. The cavity was thoroughly washed out and the dura mater not opened.

5th.—The pulse improved after operation and there was some return of consciousness, the patient responding to a grasp of the hand. The wound was frequently dressed and the cavity washed out.

6th.—Still further return of consciousness.

7th.—He progressed favorably up to 6 a.m., when the temperature commenced to rise sharply, and he had difficulty

in swallowing. Death occurred shortly, the temperature reaching  $105^{\circ}$  after death.

The temperature varied between normal and  $102.4^{\circ}$  from admission up to November 27th, gradually dropping during this time. On November 28th it was  $97.6^{\circ}$  for the first time, and from this date on to December 4th it was generally subnormal, but occasionally normal.

Before operation on this day the temperature was  $96^{\circ}$  and pulse 60. After operation the temperature rose at once to normal, and remained so till just before death, when it suddenly rose to  $105^{\circ}$ .

There is no record of the pulse in the earlier days. On December 4th it was 60, 5th, 68—73, and 6th, 69—72.

Throughout the case there was no optic neuritis, no oculo-motor paralyses, and no paralysis elsewhere.

*Post-mortem.*—Edges of bony wound rough and discoloured. The surface of the dura mater was covered by granulations. On the under surface of the dura there was a little lymph, but only in the left frontal region, and here the dura was also adherent to the subjacent membranes. The pia mater was rough and sticky over the left, and to a less extent over the right hemisphere, and the vessels were greatly injected. There were no signs of inflammation at the base. The left frontal lobe felt like a water-pillow, and was occupied by a large abscess containing 2—4 ounces of thick inodorous pus. The abscess wall was quite smooth and well formed, and evidently of some standing. The abscess wall lay superficially immediately beneath the surface grey matter, while posteriorly it reached to within a quarter of an inch of the left ventricle. The ventricle was undilated, and its contents clear fluid in ordinary amount. There was some hypostatic congestion of the lungs.

*CASE 3. Compound depressed fracture of anterior fossa; abscess of frontal lobe.*—E. S—, labourer, æt. 27, while working at a projectile factory was struck with great force on the centre of his forehead by a heavy bar of steel.

He was admitted on September 5th, 1896, with a gaping wound in the mid-line of the forehead, three inches in length, from which there had been and still was profuse



hæmorrhage. On separation of the edges of the wound an extensive comminuted depressed fracture of the frontal bone was easily seen. He was completely unconscious, breathing stertorously, and the pupils, at first unequal, were soon both dilated and inactive to light. He was at once taken to the theatre, the head cleansed, and wound freely enlarged.

A very extensive comminuted depressed fracture of both sides of the vertical portion of the frontal bone was thus exposed. The portion above the orbit on the left side with part of the orbital roof was much tilted, and had to be replaced in position. The rest of the roof of this orbit was much splintered, and had to be removed piecemeal.

Another fracture ran back into the base on the right side of the crista galli and over the cribriform plate; here there was a lacerated wound in the dura mater, from which soft brain matter was escaping. Both frontal sinuses were freely open, and their inner walls also broken, so that the right one opened close to the large tear in the dura. After careful cleansing, and elevation or removal of all fragments, a plug of cyanide gauze was inserted down to the opening in the dura and brought out at the lower part of the wound, which was then closed.

September 26th.—Passed a restless night, with temp.  $101\cdot4^{\circ}$ . Ol. Crotonis mij had no result. Vomited a good deal of swallowed blood.

29th.—Rapidly recovered consciousness on day following operation, and is now doing well in general condition. The wound was dressed to-day and the plug removed; except at this point it was all soundly healed by first intention. The eyes could be examined for the first time, as they had before been completely covered by bandages. The right pupil is widely dilated, and acts neither to light nor accommodation. There is no perceptible movement of the eyeball. There is perception of light, and he can count fingers. The left eyeball moves well and the pupil is normal.

October 3rd.—Wound soundly healed and left eye left uncovered.

6th.—Yesterday temperature rose to  $100\cdot6^{\circ}$ . Was rather restless, and to-day complained of headache and giddiness. The recovery was uneventful from this date onwards, and

he eventually was sent to Swanley Convalescent Home on November 11th, having by this time been up and about the ward for some days. He complained very little of headache, but often of giddiness. He was amusing to talk to and a favourite in the ward, but was certainly more lethargic the last few days before his discharge. The temperature on the day after operation was  $101.4^{\circ}$ , and after this varied between normal and  $100^{\circ}$  till October 8th, subsequent to which it was nearly always subnormal (between  $97^{\circ}$  and  $98^{\circ}$ ). The pulse was usually normal for the first few weeks, but tended to become slower towards the end of his stay. The bowels throughout were constipated, but there was no vomiting after the first twenty-four hours. There was no paralysis of limbs. The eyes were frequently examined, and on October 23rd Mr. Fisher made the following report :—" On the right side there is complete ptosis and almost complete immobility of the globe. There is, however, slight action of the superior oblique certainly present, and I think also of the external rectus. No muscles supplied by the third nerve act at all, including the sphincter pupillæ. The pupil is widely dilated and inactive to direct or indirect stimulus or attempts at convergence ; there is, however, indirect action of left pupil, and therefore perception of light in the right. Vision of R. = fingers at 6 ft. to 8 ft. There is no detectable change in the fundus except that pulsation of veins is very marked ; this is also noticed on left side to lesser degree. I have no doubt the right third nerve is damaged at apex of orbit, and also that the fourth and sixth are impaired. I should expect more definite changes in R. O. D. to show in a few weeks. The left eye is normal."

On November 23rd he was sent back from Swanley after twelve days' absence, as he complained of much more headache and was very lethargic. On readmission there was a great change for the worse. He was extremely drowsy, lying perfectly still with his eyes closed unless roused, and taking no interest in anything. He answered intelligently though slowly, and did what he was told. He complained of intense vertex headache.

November 26th.—Mr. Fisher reports, " No fundus change in either eye. Vision of left quite good, very difficult to test

of right. Complete paralysis of all muscles supplied by right third nerve, including levator palpebræ. The right pupil is quite paralysed and inactive to any stimulus, and is larger than the left, which acts briskly. Ophthalmoplegia interna also complete in right. The right fourth and sixth are now both efficient."

27th.—He passes his evacuations in bed, does not speak at all, and takes no notice of anything, but when roused is quite conscious. There has been some vomiting the last few days.

28th.—Operation. A flap was turned down exposing the frontal sinuses, which contained some organising blood-clot. The dura mater was incised on the left side where the bone was deficient, and the brain explored in various directions with a trocar and cannula. A trephine was then applied over right frontal bone, and this frontal lobe explored in the same way, but without result. The bone was replaced and the flap sutured.

December 4th.—The condition remained the same till this evening, when he suddenly commenced to breathe stertorously, and temperature ran up to  $104.4^{\circ}$  at death.

During his second stay the temperature was uniformly sub-normal. The pulse, nearly always slow, varied from 56 to 76.

*Post-mortem.*—There was a triangular deficiency of bone, apex upwards, from above left orbital margin to commencement of hairy scalp. The dura mater was densely adherent over the frontal region. A fracture ran back along the right side of the cribriform plate, and terminated at the right optic foramen, crossing on its way over the sphenoidal fissure. In the right frontal lobe lying immediately over this fracture lay a large abscess with very thick walls, containing over 4 oz. of green offensive pus. The frontal lobe around it was softened, and the wall being so thick the abscess shelled out whole, and could be rolled about the table. In fact, it needed a sharp plunge with a knife to open it.

There was slight excess of fluid in the ventricles. The cranial nerves in right cavernous sinus were evidently implicated in the fracture. There was no other brain lesion, and no basal meningitis.





A NOTE  
ON  
THE ESTABLISHMENT OF AN "X RAY"  
DEPARTMENT IN THE HOSPITAL.

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By A. BARRY BLACKER, M.D.,  
SUPERINTENDENT OF THE X RAY DEPARTMENT, ST. THOMAS'S HOSPITAL.

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SHORTLY after the discovery of the practical utility of the "X rays" in the diagnosis of medical and surgical affections and injuries, experiments were carried out in the wards of St. Thomas's Hospital by Mr. A. F. Stanley Kent, afterwards assisted by Mr. Edwin White, Pharmaceutist to the Hospital. The result of these preliminary experiments so fully demonstrated the practical utility of the method to members of the staff, that representations were made to the Treasurer, to the effect that it would be to the good of the patients generally that a proper department equipped with all necessary apparatus should be instituted. The Treasurer, with his accustomed zeal in all matters concerning the advancement of the interests of the patients, at once brought the question under the notice of the Governors, with the result that a department was promptly organised, and put under my charge.

During the last few months of 1896 the Electrical room was used for the examination of cases by means of the X rays, whilst the permanent rooms were being fitted up; and although it would not be possible to make use of the small

amount of material collected during this period for a regular report, still it may be interesting to place on record the fact that it has been thought advisable to establish a properly equipped X ray department in a large general hospital as an aid to diagnosis.

The apparatus with which the temporary department commenced consisted of a coil capable of giving a six-inch spark in air, with a couple of secondary batteries, the necessary fluorescent screen, and two or three vacuum tubes, and with these an astonishing amount of examinations were made.

The rooms selected for the permanent department are situated in the basement of block No. 7, beneath the old out-patient consulting rooms, and are approached by the stairs opposite to the entrance of Adelaide Ward. The lift from the different corridors of the Hospital opens within a few yards of the rooms, and the patients can be conveyed straight down in their beds from the wards without being in any way disturbed. There is a wide corridor outside the examination rooms, which forms a convenient waiting-room for the patients.

The three small rooms which constitute the department consist of one for undressing and note-taking, a second for examination, and a third dark room for developing sensitive plates; each being fitted up with every convenience for the purposes for which it is designed. The apparatus at present in use consists of an eight-inch coil, a twelve-inch coil, a Tesla coil, numerous batteries, stands and tube-holders. The coils can be worked either with the current from the mains or from secondary batteries. The vacuum tubes consist of tubes from every maker which were available, and the main difficulties encountered in X ray work would seem to be concentrated in the continual attention, re-exhaustion, and manipulation which the tubes require in order to procure the best results in the examination of the different portions of the body.

Undoubtedly the greatest and the most satisfactory use of the department during the year has been in the detection of foreign bodies, especially those of a metallic composition; and it is wonderful to find how many of these find their way

into the different parts of the body, consisting of needles, pins, bullets, pieces of glass, wood, stone, coins, false teeth, and thimbles.

In the case of coins and large foreign bodies it was generally sufficient to make use of the platino-cyanide screen, and to mark the position of the object on the surface of the skin ; but in the case of small portions of needles and pins, which were often deeply embedded, it was necessary to record the position by means of impressions received on sensitive plates taken at right angles to each other, and in one or two instances when the object was especially difficult to localise, the removal was effected in a dark room, the screen and rays being employed during the operation as often as required. This was undoubtedly the most satisfactory method of assisting the surgeon, but the difficulties and inconveniences were so considerable that except in special cases it was not possible to employ it.

An interesting application of the fluorescent screen was in the case of foreign bodies impacted in the pharynx or œsophagus, in which positions the localisation having been effected, the coin-catcher or forceps could be directed exactly to the substance, and the operator informed by means of the screen exactly when the instrument was in the neighbourhood of the substance to be removed.

The difficulty of exactly recording the position of extraneous matter in the abdomen is especially great when such material is free in the intestinal canal, as the movement produced by the peristalsis of the intestinal walls is sufficient to cause it to move along the surface of the sensitive plate, and a long and very indefinite shadow results, which is as little like the object of which you are in search as it is possible to imagine ; but here again the fluorescent screen comes to our rescue, and by its assistance the objects can be seen as they move along in the intestinal canal, and a statement can be at once made as to whether it is impacted or free. To watch a coin in the abdomen of a child thus proceeding on its course to the rectum is an interesting sight, although sometimes difficult to see, as it is not always in the colon or part of the intestine which is sufficiently near to the surface to cast a clear shadow ; and when in addition to

this the coin (or other substance) is in profile, and the tube not working at its best, the shadow becomes very hazy and difficult to distinguish. Unfortunately the time has not yet arrived when it will be possible to take a snapshot at a body moving in the abdomen.

After the employment of the X rays in the detection and localisation of foreign bodies, the examination of fractures and dislocations must be noted as affording assistance in cases of difficulty. It is especially useful in the case of fractures in the vicinity of joints where the swelling disguises the part and the pain is severe on manipulation; for when the parts are so torn as to confuse the diagnosis, the absence of any severe injury to the bones or joints may be proved, prolonged treatment in splints may be avoided, and passive movement commenced at an earlier date. Much aid may also be given in the detection of bony sequestra.

The detection of tumours in connection with bones is also another instance of the usefulness of the rays, for it is possible to show from which part of the bone the tumour starts, and how much of the structure is involved.

Many examinations of the thorax for aneurysms, and for noting the size of the shadow thrown by the heart, were made; and even in the pulmonary tissue it was possible to demonstrate the difference in the consistency of diseased portions of the organs.

The changes of the bones in osteo-arthritis, acromegaly, and rheumatoid arthritis, caries in the spine and other parts, have been investigated with more or less success. The following are three of the more interesting cases examined during the last three months of 1896.

1. *Bullet in the head.*—A bullet from a small air-gun penetrated the left eye, and disappeared into the skull. It was seen on the screen in the lateral but not in the antero-posterior position; skiagrams were taken in both positions, and the bullet observed to be situated in the temporo-sphenoidal lobe of the right side, about an inch and a half from the lateral side of the skull, and one inch above and behind the external auditory meatus.

2. *Glass tube in the left bronchus.*—This was another in-



teresting case. A girl of ten years was playing with the feeding bottle of her infant brother, having the piece of glass which connects the india-rubber tubing with the teat in her mouth, when it disappeared, and on lung symptoms supervening it was considered probable that it had been inhaled into the lung, and an X ray examination discovered it in or near the left bronchus. Unfortunately it was not at that time possible to take lateral skiagrams of the thorax, so that the exact depth from the posterior surface could not be accurately determined.

3. *Necrosed bone in the lower end of the radius.*—This was a case in which a bullet wound of the wrist had led to a great deal of inflammation and extensive suppuration. The bullet and some dead bone had been already removed; the X ray examination showed two pieces of necrosed bone lying in pus and almost separated near the styloid process, which were easily removed.

Many other interesting cases resulting from bullet wounds and disease were examined, but it would be only tedious to describe them at length; these few instances, however, will show that the employment of the X rays in the examination of the tissues is of considerable service.



# MEDICAL REPORT.

1896.

BY CHAS. R. BOX, M.D., B.S., B.Sc.LOND., M.R.C.P., F.R.C.S.

TABLE I.—*General Statement of Medical and Surgical Patients.*

				Males.	Females.	Total.	
Number of patients in Hospital, Jan. 1st, 1896				204	162	366	
" " " Dec. 31st, 1896				240	176	416	
" " " discharged or died during 1896 :							
				Males.	Females.	Total.	Rate per cent.
Cured	...	2159	1519	3678	61.32		
Relieved	...	653	614	1267	21.12		
Unrelieved or other causes	...	233	217	450	7.50		
Died	...	353	250	603	10.05		
Total				3398	2600	5998	
Average number of days of each medical patient's stay in hospital—				25.02.			
" " " surgical				22.62.			

TABLE II.—*General Medical Statement.*

Number of Medical Beds <sup>1</sup> ...				...	...	...	200		
					Males.	Females.	Total.		
Number of patients in Medical Wards, Jan. 1st, 1896				...	69	...	65	...	134
" " admitted during the year 1896				...	1197	...	859	...	2056
Total				...	1266		924		2190
" " in Medical Wards, Dec. 31st, 1896				...	90	...	64	...	154
" " treated to a termination during 1896				1176	...	860	...	2036	
" " discharged or died during 1896:									
				Males.	Females.	Total.		Rate per cent.	
Cured	...	...	546	...	433	...	979	...	48.08
Relieved	...	...	312	...	228	...	540	...	26.52
Unrelieved or other causes	...	...	104	...	70	...	174	...	8.54
Died	...	...	214	...	129	...	343	...	16.84
Total				...	1176		860		2036
Average number of days of each patient's stay in hospital—25.02.									

<sup>1</sup> This does not include 21 beds in Adelaide Ward, the statistics of which are given in the Report of the In-patient Department for the Diseases of Women.

Florence Ward, containing 30 beds for male medical patients, was opened on May 19th, 1896.

TABLE III.—*General*

DISEASE.	Number of cases.			Age.							Duration of residence.									
	Total.	M.	F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60	Under 1 week.	Wks. 1-2	Wks. 2-4	Mths. 1-2	Mths. 2-4	Mths. 4-6	Mths. 6-9	Mths. 9-12	Above 1 year.
<b>I. GENERAL DISEASES.</b>																				
Measles . . . . .	19	9	10	15	3	...	1	...	...	...	...	5	1	3	6	4	...	...	...	...
Scarlet fever . . . . .	17	8	9	2	3	6	5	1	...	...	...	6	2	1	6	2	...	...	...	...
Mumps . . . . .	3	1	2	1	...	...	2	...	...	...	...	1	1	1	...	...	...	...	...	...
Varicella . . . . .	3	2	1	...	2	...	1	...	...	...	...	2	1	...	...	...	...	...	...	...
Influenza . . . . .	15	9	6	...	...	...	14	...	...	1	...	10	4	1	...	...	...	...	...	...
Enteric fever . . . . .	62	38	24	2	10	20	21	6	3	...	...	...	3	6	32	20	1	...	...	...
Typhus fever . . . . .	1	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Diphtheria . . . . .	111	47	64	80	23	4	2	2	...	...	...	40	6	22	32	9	2	...	...	...
Diphtheritic paralysis . . . . .	3	1	2	1	2	...	...	...	...	...	...	1	1	1	...	...	...	...	...	...
Fever of doubtful nature . . . . .	27	15	12	4	4	10	6	2	...	1	...	3	11	12	1	...	...	...	...	...
Whooping-cough . . . . .	1	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Ague . . . . .	1	1	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...
Septicæmia . . . . .	3	...	3	...	...	1	2	...	...	...	...	1	...	2	...	...	...	...	...	...
Syphilis . . . . .	5	3	2	2	...	1	1	...	...	1	...	2	1	2	...	...	...	...	...	...
Acute rheumatism . . . . .	143	99	44	5	13	59	37	17	12	...	...	9	37	66	30	1	...	...	...	...
Chronic articular rheumatism . . . . .	10	6	4	...	...	2	...	2	2	1	3	2	3	1	2	2	...	...	...	...



Table of Diseases.

Cured.		Relieved.		Unrelieved.		Died.		REMARKS.
I.	F.	M.	F.	M.	F.	M.	F.	
7	4	...	...	...	1	2	5	7 cases, including 1 nurse, originated in hospital. Of fatal cases: tracheotomy in 3, and diphtheria complicated one of these; broncho-pneumonia in 3; bronchitis in 1. Of recoveries: tracheotomy in 2; scarlet fever in 2. One of latter transferred to fever hospital.
3	4	...	...	3	4	2	1	Of 7 cases originating in hospital, 2 occurred in surgical patients and 5 in nurses. Of fatal cases: empyema and albuminuria in 1, asthenia in 1, scarlatina maligna in 1. Of cases discharged: rheumatism in 5, endocarditis in 1, albuminuria in 1, and secondary rashes in 1. The cases unrelieved were transferred to fever hospitals. For other cases see "Tuberculous peritonitis," "Inflammation of vermiform appendix," "Chorea," "Measles," and "Unclassified (muscular dystrophy)."
1	2	...	...	...	...	...	...	Includes 2 nurses.
...	1	1	...	...	...	1	...	In fatal case gangrenous varicella and pneumonia.
9	5	...	...	...	...	...	1	1 case admitted as enteric fever. Right basal pneumonia and interstitial nephritis in fatal case.
3	22	...	...	...	...	5	2	See Special Abstract.
...	...	...	...	1	...	...	...	Transferred to fever hospital.
8	44	...	...	...	...	19	20	See Special Abstract.
...	1	...	...	...	...	1	1	Wide-spread paralysis in fatal cases.
5	11	...	...	1	...	...	...	Pneumonia suspected in 3, enteric fever in 1, and tuberculosis in 1. Case unrelieved removed by parents.
...	1	...	...	...	...	...	...	Complicated by broncho-pneumonia.
...	1	...	...	...	...	...	...	Contracted abroad.
...	2	...	...	...	...	...	1	Of recoveries: 1 puerperal, and treated with antistreptococcic serum. Follicular ulceration of colon in fatal case.
...	1	2	...	...	...	1	1	In 3 congenital, in 2 acquired. Of acquired cases: gumma of chest wall in 1, periostitis of tibia in 1. Of congenital cases: 2 fatal in infants; in third case visceral and bone lesions.
7	44	...	...	1	...	1	...	Of recoveries: 71 were cases of first attack, and in 32 of these there was evidence of mitral disease, in 2 of mitral and aortic disease, and in 6 of pericarditis; erythematous eruption in 1, purpuric in 1, urticarial in 1; pleurisy in 1, phthisis in 1, albuminuria in 1, chorea in 1, vomiting in 1. 45 were cases of second attack, and 28 of these showed evidence of mitral disease, 2 of mitral and aortic disease, and 6 of pericarditis; rheumatic nodules in 2, albuminuria in 2, delirium in 1, erythema in 3, and purpura in 1. Of the 26 cases of third or later attack, mitral disease was present in 11, aortic disease in 3, aortic and mitral disease in 5, pericarditis in 4, pleurisy with effusion in 1, bronchitis in 1, nodules in 1, albuminuria in 1. The fatal case was one of first attack, complicated by hæmorrhagic pericarditis, aortic disease, and subserous hæmorrhages.
...	5	3	...	1	...	...	...	

TABLE III—

DISEASE.	Number of cases.			Age.							Duration of residence.										
	Total.	M.	F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60	Under 1 week.	Wks. 1-2	Wks. 2-4	Mths. 1-2	Mths. 2-4	Mths. 4-6	Mths. 6-9	Mths. 9-12	Above 1 year.	
I. GENERAL DISEASES— <i>continued.</i>																					
Muscular rheumatism . . . . .	6	3	3	...	...	...	4	2	...	...	...	5	1	...	...	...	...	...	...	...	
Gonorrhœal rheumatism . . . . .	2	2	...	...	...	...	1	1	...	...	...	...	...	...	1	1	...	...	...	...	
Gout. . . . .	6	6	...	...	...	...	...	1	3	1	1	...	1	2	3	...	...	...	...	...	
Rickets . . . . .	6	5	1	2	...	2	2	...	...	...	...	2	...	3	1	...	...	...	...	...	
Myxœdema . . . . .	3	1	2	...	...	...	...	2	1	...	...	...	1	2	...	...	...	...	...	...	
Cretinism . . . . .	1	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	
Diabetes mellitus . . . . .	5	5	...	...	...	...	...	3	1	1	...	1	...	1	3	...	...	...	...	...	
Diabetes insipidus . . . . .	2	1	1	...	...	...	...	2	...	...	...	...	1	...	...	1	...	...	...	...	
Purpura . . . . .	4	3	1	1	1	1	...	...	...	1	...	1	...	2	...	1	...	...	...	...	
Anæmia . . . . .	31	8	23	1	3	9	15	1	2	...	...	1	7	14	7	...	2	...	...	...	
Pernicious anæmia . . . . .	1	...	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	
Lymphadenoma . . . . .	4	4	...	...	1	...	...	1	1	1	...	...	1	3	...	...	...	...	...	...	
Leucocythæmia . . . . .	2	1	1	1	...	1	...	...	...	...	...	...	...	2	...	...	...	...	...	...	
General tuberculosis . . . . .	7	5	2	3	2	1	1	...	...	...	...	5	...	1	...	...	...	...	...	...	
Disseminated malignant disease . . . . .	1	...	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	
Lardaceous disease . . . . .	1	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	
Hydrophobia . . . . .	1	...	1	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	
Osteitis deformans . . . . .	1	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	
Acromegaly . . . . .	1	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	
Pulmonary osteo-arthritis . . . . .	2	2	...	...	...	...	...	...	1	1	...	...	...	...	1	1	...	...	...	...	

*continued.*

Cured.		Re-lieved.		Unre-lieved.		Died.		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	
3	3							
1				1				One case transferred to Surgical side for contracture of knees.
6								Bronchitis in 1, persistent albuminuria in 1, transitory albuminuria in 1.
2		1				2	1	Of recoveries: bronchitis in 2. Of fatal cases: in 1 bronchitis and pulmonary collapse, in 1 convulsions, and in 1 vomiting and diarrhœa.
	1	1	1					Influenza in 1.
		1						
		3		1		1		Of cases discharged: abscess of abdominal wall in 1, phthisis in 1. Coma and xanthomata in fatal case.
		1				1		Pregnancy in 1.
2	1			1				Melœna in 1, epistaxis in 1, bleeding gums in 1.
1	13	6	10			1		Of male cases: in 1, a boy, admitted twice during the year and three times in 1895, enlarged spleen, mitral disease, and bronchitis; in 1, for a time diagnosed as pernicious anæmia, active faucial ulceration appeared, and cure resulted from antisymphilitic treatment. Of females: vomiting in 5, gastric pain in 5, fainting fits in 1, hysterical fits in 1, exophthalmos in 1, thrombosis of veins of leg in 1, albuminuria in 1, bronchitis in 1, and fever in 1. No P.M. on fatal case.
							1	Adherent pleuræ, dilated heart, much yellow fat; typical iron reaction in liver.
		2				2		Of cases relieved: in 1 pleural effusion, albuminuria, diarrhœa, and enlarged heart; in 1 sciatica. Of fatal cases: hypostatic pneumonia in 1; œdema and effusion into serous sacs, and considerable gelatinous thickening of mucous membrane of sigmoid flexure in other. Enlarged lymphatic glands, liver, and spleen in both.
		1	1					In male enlarged liver, enlarged spleen, and retinitis. In female enlarged liver and spleen. No glandular enlargement.
		1				4	2	The boy discharged subsequently died. Of fatal cases: tubercles widely disseminated in all; caseous broncho-pneumonia in 1, caries of spine and psoas abscess in 1, cirrhosis of liver in 1, caseous nodules in cerebellum in 1, and in liver in 1, ulceration of intestine and old focus in lung in 1, bronchial glands caseous in 3, bronchial and mesenteric glands in 2.
				1				Discharged at own request.
							1	Lardaceous disease of kidneys, spleen, intestine, thyroid, and adrenals. Peritonitis, pericarditis, and ovarian abscess.
							1	
				1				
				1				
				2				See 'Brit. Med. Journ.' Hæmoptysis in 1 (Dr. Ruffenach Walter's case).

TABLE III—

DISEASE.	Number of cases.			Age.							Duration of residence.										
	Total.	M.	F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60	Under 1 week.	Wks. 1-2	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above	
II. DISEASES OF THE SKIN.																					
Erythema. . . . .	1	...	1	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	
Erythema nodosum . . .	1	...	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	
Eczema . . . . .	4	1	3	...	...	2	...	1	1	...	...	...	...	2	1	1	...	...	...	...	
Dermatitis herpetiformis .	2	2	...	...	...	...	1	1	...	...	...	...	...	2	...	...	...	...	...	...	
Pemphigus . . . . .	2	1	1	...	...	...	...	...	...	2	...	...	...	1	1	...	...	...	...	...	
Scrofuloderma . . . . .	1	...	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	
Tertiary syphilide . . .	1	...	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	
III. DISEASES OF THE RESPIRATORY SYSTEM.																					
Simple laryngitis . . . .	6	4	2	3	1	...	1	1	...	...	...	3	1	1	1	...	...	...	...	...	
Septic laryngitis . . . .	2	1	1	...	...	...	...	...	...	1	1	...	1	...	...	1	...	...	...	...	
Syphilitic laryngitis . .	6	5	1	...	...	...	...	1	4	1	...	...	...	4	2	...	...	...	...	...	
Papilloma of larynx . . .	1	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	
Malignant disease of trachea	1	1	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	
Acute bronchitis . . . .	18	4	14	7	1	1	1	2	4	1	1	9	...	9	...	...	...	...	...	...	
Chronic bronchitis . . .	10	6	4	...	...	...	3	2	...	2	3	3	3	3	1	...	...	...	...	...	
Broncho-pneumonia . . .	40	25	15	31	8	1	...	...	...	...	...	6	14	13	5	2	...	...	...	...	
Acute pneumonia . . . .	57	48	9	4	7	19	8	11	6	2	9	17	28	3	...	...	...	...	...	...	



*continued.*

Cured.		Re- lieved.		Unre- lieved.		Died.		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	
...	1	...	...	...	...	...	...	Burn rash.
...	1	...	...	...	...	...	...	
...	1	1	2	...	...	...	...	One case of general eczema with relapses.
1	...	1	...	...	...	...	...	
...	...	1	...	...	...	...	1	Relapsing case discharged at own request. In fatal case lobar pneumonia; no bullæ at time of death.
...	...	...	1	...	...	...	...	Treated with thyroid and scraped.
...	...	...	1	...	...	...	...	
4	2	...	...	...	...	...	...	Tracheotomy in 1.
1	1	...	...	...	...	...	...	
...	...	5	1	...	...	...	...	Perichondritis, adductor palsy, and laryngotomy in 1. Tracheotomy in 1. Albuminuria in 1.
1	...	...	...	...	...	...	...	Excision.
...	...	...	...	...	...	1	...	Growth in wall of trachea below cricoid, involving thyroid gland; broncho-pneumonia.
4	13	...	...	1	...	...	...	Tuberculosis suspected in 1.
...	...	5	3	...	...	1	1	In both fatal cases emphysema, cardiac dilatation, and congested viscera.
18	12	2	...	1	...	4	3	Of cases discharged: rickets in 1, diarrhœa in 1, hæmorrhage from bowel in 1, suspected tuberculosis in 1. Of fatal cases: suppurating foci in 1, dilated bronchioles in 1, serous pleural effusion in 1. In 1 no P.M.
39	8	1	...	...	...	8	1	Situation: right lung 34, left 22, both 1. Of cases on right: in 4 upper, in 20 lower, in 2 middle, in 1 upper and middle, in 5 lower and middle, and in 2 all three lobes involved. Of cases on left: in 1 upper, in 19 lower, and in 2 both lobes involved. In 1 instance left lower and right upper lobes involved. 48 cases of first attack, 6 fatal; 5 cases of second attack, 1 fatal. In others previous history not obtained. Crisis on 3rd day in 1, on 4th in 2, on 5th in 11, on 6th in 12, on 7th in 9, on 8th in 4, on 10th, 11th, and 12th, each once. 1 case terminated by lysis; in remainder death ensued, or day of crisis could not be determined. Of recoveries: transient albuminuria in 10, herpes in 3, pleurisy in 3, diarrhœa in 1, delirium in 3, residual signs at base with fever in 2. Of fatal cases: extensive pleurisy in 2, purulent pericarditis in 1, empyema in 1, gummata of liver and spleen in 1.

TABLE III—

DISEASE.	Number of cases.			Age.								Duration of residence.									
	Total.	M.	F.	Under 5	5-10	20	30	40	50	60	Above 60	Under 1 week.	Wks. 1-2	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts 9-12	Above 1 year.	
III. DISEASES OF RESPIRATORY SYSTEM—continued.																					
Phthisis . . . . .	66	43	23	5	3	9	16	17	9	6	1	12	16	20	13	5	...	...	...	...	
Malignant disease of lung	1	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	
Fibroid disease of lung	1	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	
Abscess of lung . . .	2	1	1	...	...	...	2	...	...	...	...	...	...	...	1	1	...	...	...	...	
Collapse of lung . . .	1	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	
Bronchiectasis . . .	2	2	...	1	...	...	...	...	1	...	...	...	...	1	1	...	...	...	...	...	
Hæmoptysis . . . . .	12	11	1	...	...	8	2	...	2	...	4	3	4	1	...	...	...	...	...	...	
Gangrene of lung . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Pleurisy . . . . .	61	47	14	5	8	14	12	15	3	1	3	3	9	28	19	2	...	...	...	...	
Hæmothorax . . . . .	1	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	
Pneumothorax . . . .	5	5	...	1	2	2	...	...	...	...	...	...	...	2	3	...	...	...	...	...	
Empyema . . . . .	24	19	5	4	5	2	4	3	3	3	...	3	4	2	14	1	...	...	...	...	
Asthma . . . . .	2	...	2	...	...	1	1	...	...	...	...	1	1	...	...	...	...	...	...	...	

*continued.*

Cured.		Re- lieved.		Unre- lieved.		Died.		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	
...	...	22	12	9	1	12	10	Of cases discharged: chronic bronchitis in 1, asthma in 1, pleurisy in 3, hæmoptysis in 5, pericarditis in 2, aortic disease in 1, ulceration of bowel in 2, enlarged liver in 1, albuminuria in 1, enlarged cervical glands in 1, cervical abscess in 1, torticollis in 1, active syphilis in 1, history of recent abortion in 2, and of previous pleurisy in 1. Of fatal cases: in all but one both lungs were affected, and in this one right caseous broncho-pneumonia existed; large basic cavity in 1, old collapse of left lung in 1, general tuberculosis in 2, tuberculous mass under left motor cortex in 1, caseous masses in liver in 2, in liver and spleen in 3, ulceration of larynx in 1, of ileum in 2, and chronic tuberculous peritonitis in 1 of these; fatty liver in 2, chronic interstitial nephritis and hypertrophied heart in 1; in 1 possibly Addison's disease, but supra-renals not identified; in 1 carcinoma of pancreas and dilatation of bile-passages. In 2 of the fatal cases phthisis followed measles.
...	...	1	...	...	...	...	...	Secondary to pulsating sarcoma of leg. Hæmoptysis.
...	...	...	...	...	...	1	...	Extensive fibrosis and bronchiectasis of left lung, basal cavity, and obliteration of pleural sac.
...	...	1	1	...	...	...	...	In 1 thrombosis of veins of neck and arm; resection of rib, and abscess found in or near right apex. In other pus expectorated.
...	...	...	...	...	...	1	...	
...	...	1	...	...	...	1	...	Both explored; cavity not found. P.M. on fatal case refused.
9	...	...	...	...	...	2	1	Phthisis in all.
...	...	...	...	...	...	...	...	See "Fatty heart."
39	14	7	...	...	...	1	...	Right-sided 34, left-sided 26, bilateral 1. Aspiration: once 28 times, twice 7 times. Exploration once. Family history of phthisis in 13; history of trauma in 3. Evidence of phthisis in 2, recent pneumonia in 2, and measles in 1. Mitral disease, right abductor paralysis, pregnancy, each in 1; transient albuminuria in 2. In fatal case: bilateral tuberculous pleurisy with old deposits in lungs and syphilitic endarteritis.
1	...	...	...	...	...	...	...	Traumatic.
2	...	1	...	1	...	1	...	Right-sided in 3, left-sided in 2. Aspiration in 3, in one thrice. Resection of rib in 2. Empyema in 3. Phthisis in all. Laryngeal ulceration in fatal case.
11	3	2	...	3	...	3	2	Right-sided in 24, left-sided in 24. Resection of rib in 15, Estlander's operation in 1 (fatal). In 3 transferred to Surgical side, empyemata had been previously drained on same side of chest; 3 ruptured into lung and were expectorated; 2 followed pneumonia, 1 (fatal) complicated pneumothorax; strong family history of phthisis in 3. Of fatal cases: in 2 no operation; empyema loculated in 1, tuberculous in 2, purulent pericarditis in 1.
...	...	2	...	...	...	...	...	Albuminuria in 1.

TABLE III—

DISEASE.	Number of cases.			Age.								Duration of residence.									
	Total.	M.	F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60	Under 1 week.	Wks. 1-2	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above 1 year.	
III. DISEASES OF RESPIRATORY SYSTEM— <i>continued.</i>																					
Mediastinal growth . . .	9	8	1	...	1	2	...	3	1	1	1	3	1	2	3	...	...	...	...	...	
IV. DISEASES OF THE CIRCULATORY SYSTEM.																					
Pericarditis . . . . .	3	1	2	1	1	1	...	...	...	...	...	1	...	...	2	...	...	...	...	...	
Valvular disease of heart—																					
(a) Mitral obstruction . .	7	...	7	...	...	2	1	1	2	...	1	...	2	3	2	...	...	...	...	...	
(b) Mitral incompetence .	19	4	15	...	1	4	2	1	7	1	3	1	1	4	10	3	...	...	...	...	
(c) Mitral obstruction and incompetence	39	21	18	...	4	8	16	6	4	1	...	1	7	20	10	1	...	...	...	...	
(d) Aortic disease . . .	15	10	5	...	...	1	3	4	5	1	1	...	3	9	2	1	...	...	...	...	



*continued.*

Cured.		Re- lieved.		Unre- lieved.		Died.		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	
...	...	1	...	2	...	5	1	Fatal cases all probably sarcomatous or lympho-sarcomatous. In 1 a spindle-celled sarcoma entered the spinal canal and compressed the spinal cord; in 1 pressure on brachial plexus, and secondary subcutaneous and perirenal growths; in 1 considerable pressure on bronchi, and tracheotomy; in 2 extensive pleurisy, and in 1 extensive deposits in heart, liver, and lymphatic glands.
1	1	...	...	...	...	...	1	In both recoveries acute rheumatism, and in 1 mitral disease. Pneumonia and pyopericardium in fatal case.
...	...	...	7	...	...	...	...	History of chorea in 1, of rheumatic fever in 4, cause not traced in 2. Bronchitis in 1, œdema of lungs in 1, ascites and œdema of legs in 1, albuminuria in 1, old right hemiplegia in 1.
...	...	4	13	...	...	...	2	History of rheumatism in 13, alcoholism in 1, probable renal disease in 1. Of cases relieved: pericarditis in 2, tricuspid systolic murmur in 2, bronchitis in 3, œdema and infarction of lung in 1, phthisis in 1, pleurisy with effusion in 1, albuminuria in 15, ascites in 3, œdema of legs in 9, enlarged liver in 6, enlarged spleen in 1, dementia in 1. Pericardial adhesion in each fatal case, but only in 1 was there passive congestion of viscera.
...	...	20	17	...	...	1	1	History of rheumatism in 30, chorea in 2, scarlatinal rheumatism in 1. Of cases discharged: pericarditis in 2, tricuspid incompetence in 2, bronchitis in 4, pleurisy in 2, ascites in 11, œdema of legs in 7, enlarged liver in 7, enlarged spleen in 1, albuminuria in 11, epistaxis in 1, hæmorrhage from bowel in 1, delirium in 1, hemiplegia in 2. Of fatal cases: in 1 no P.M.; in other adherent pericardium, obstructed and incompetent mitral valve, and cardiac viscera.
...	...	8	5	...	...	2	...	History of rheumatism in 6, syphilis in 2, rheumatism and syphilis in 2, alcoholism in 3. Of cases discharged: in 1 bronchitis, in 1 suspected phthisis, in 1 angina, in 1 syncopic attacks, in 1 enlarged liver, in 1 enlarged spleen, in 2 œdema of legs, in 7 albuminuria (in 1 case associated with hæmaturia), in 1 epistaxis, in 1 hæmorrhoids. Of fatal cases: in 1 hypertrophied and dilated heart, extensive atheroma of aorta, adherent pleuræ, and cardiac viscera; no P.M. on other.

TABLE III—

DISEASE.	Number of cases.			Age.								Duration of residence.									
	Total.	M.	F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60	Under 1 week.	Wks. 1-2	Wks. 2-4	Mths. 1-2	Mths. 2-4	Mths. 4-6	Mths. 6-9	Mths. 9-12	Above 1 year.	
IV. DISEASES OF THE CIRCULATORY SYSTEM— <i>continued.</i> Valvular disease of heart— (e) Aortic and mitral disease	46	28	18	...	...	9	7	9	14	7	...	5	6	15	17	3	...	...	...	...	
Ulcerative endocarditis	4	3	1	...	...	2	2	...	...	...	...	3	...	...	1	...	...	...	...		
Congenital heart disease	3	...	3	...	...	1	2	...	...	...	...	1	1	1	...	...	...	...	...		
Fatty heart	2	2	...	...	...	...	...	...	...	...	2	...	1	...	1	...	...	...	...		
Obscure cardiac disease	6	1	5	...	...	1	3	1	...	1	...	1	1	1	2	1	...	...	...		
Thoracic aneurysm	12	12	...	...	...	...	7	2	1	2	...	1	2	3	6	...	...	...	...		
Abdominal aneurysm	1	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...		
General arterial disease	3	3	...	...	...	...	...	...	...	1	2	...	1	...	2	...	...	...	...		

*continued.*

Cured.		Re- lieved.		Unre- lieved.		Died.		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	
...	...	22	14	...	...	6	4	History of rheumatism in 22, chorea in 2, chorea and rheumatism in 1, syphilis in 1, alcohol and syphilis in 1, strain in 1. Of cases discharged: pericarditis in 2, mitral obstruction in 7, bronchitis in 5, œdema of lungs in 2, ascites in 3, large liver in 4 (pulsating in 1, twice admitted, and indurated in 1), enlarged spleen in 1, albuminuria in 13, vomiting in 11, dysphagia in 1, œdema of legs in 9, epistaxis in 1, tricuspid incompetence in 1, delusions, sleeplessness, and suicidal tendency in 1. Of fatal cases: in 1 dilatation of orifices, apparently secondary to dilatation of aorta; in 1 degenerative valve changes, cirrhosis of liver, and blood-stained pleural effusion; in 2 mitral constriction and aortic incompetence, with cardiac viscera and serous effusions, associated in 1 with localised empyema, and in 1 with recent tricuspid endocarditis; in 1 vegetations on both aortic and mitral valves, but latter alone incompetent, mixed nephritis and infarction of lung; in 2 old and recent endocarditis and cardiac viscera (ruptured rectus abdominis, with large hæmorrhage in abdominal wall in 1 of these); in 1 old aortic and mitral endocarditis, cardiac viscera, and mixed nephritis; in 1 both aortic and mitral orifices calcareous and narrowed, tricuspid incompetence, infarcted lung, cardiac liver and kidneys; in 1 no P.M.
...	...	...	...	...	...	3	1	Aortic and mitral valves affected in 2, aortic valves only in 2. Evidence of old-standing valvular disease in 3, ulceration of wall of left auricle in 1, pericarditis in 2, embolic and symmetrical cerebral softening in 1, kidneys pale and swollen in 3, infarcted in 1, infarcted spleen in 2, cardiac spleen in 1, large soft spleen in 1. Undescended testicles in 1. See also "Cerebral tumour."
...	...	3	...	...	...	...	...	In fatal case: pulmonary and left ventricular thrombi, gangrene of lung, ulcerative colitis, and peritonitis.
...	...	1	...	...	...	1	...	In 2 possibly adherent pericardium. In fatal case: dilated right heart and cardiac viscera.
...	...	1	4	...	...	1	...	Syphilis the probable cause in 6. Situation: ascending arch 2, descending arch 1, innominate 1, others not determined. Of fatal cases: in 1 cardiac viscera and serous effusions; in 1 an intrapericardial aneurysm of aorta communicated with the superior cava, which was obliterated below the aneurysm, intense cyanosis and œdema; in 1 an aneurysm of descending arch compressed the trachea and left bronchus; in 1 a dissecting aneurysm of aorta ruptured into pericardium. See also "Special Abstracts."
...	...	6	...	2	...	4	...	History of syphilis. Saccular aneurysm of abdominal aorta above left kidney.
...	...	1	...	...	...	2	...	Syphilis in 1. Dilated heart and cardiac viscera in each. In 1 infarction of lung and thrombosis of veins of left leg. See also Surgical notes, 1896, heading "Medical."

TABLE III—

DISEASE.	Number of cases.			Age.								Duration of residence.									
	Total.	M.	F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60	Under 1 week.	Wks. 1-2	Wks. 2-4	Mths. 1-2	Mths. 2-4	Mths. 4-6	Mths. 6-9	Mths. 9-12	Above 1 year.	
IV. DISEASES OF THE CIRCULATORY SYSTEM— <i>continued.</i>																					
Raynaud's disease . . . . .	2	2	...	...	...	...	1	1	...	...	...	1	1	...	...	...	...	...	...	...	...
Venous thrombosis . . . . .	4	2	2	...	...	1	2	...	...	1	...	1	1	2	...	...	...	...	...	...	...
V. DISEASES OF THE DUCTLESS GLANDS.																					
Exophthalmic goitre . . . . .	5	1	4	...	...	...	2	3	...	...	...	1	3	...	...	1	...	...	...	...	...
Addison's disease . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
VI. DISEASES OF THE DIGESTIVE ORGANS.																					
1. <i>Alimentary canal.</i>																					
Ulcerative stomatitis . . . . .	2	1	1	2	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...
Thrush . . . . .	1	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Œdema of fauces . . . . .	1	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...
Tonsillitis . . . . .	62	19	43	6	...	12	39	4	1	...	...	32	21	7	2	...	...	...	...	...	...
Simple stricture of œso-phagus . . . . .	2	1	1	...	...	2	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...
Malignant disease of œso-phagus . . . . .	15	15	...	...	...	...	...	...	3	6	6	1	5	5	4	...	...	...	...	...	...
Dysphagia . . . . .	1	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...
Dyspepsia . . . . .	16	12	4	...	1	2	11	1	1	...	...	6	8	2	...	...	...	...	...	...	...
Gastric pain . . . . .	15	3	12	...	2	6	3	4	...	...	...	1	2	10	2	...	...	...	...	...	...
Gastric ulcer . . . . .	43	6	37	...	3	22	14	3	...	1	...	6	3	6	26	2	...	...	...	...	...
Hæmatemesis . . . . .	4	1	3	...	1	...	1	1	1	...	...	2	1	1	...	...	...	...	...	...	...
Vomiting . . . . .	6	4	2	1	1	3	1	...	...	...	...	4	1	1	...	...	...	...	...	...	...
Dilated stomach . . . . .	1	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...



*continued.*

Cured.		Re- lieved		Unre- lieved.		Died.		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	
				2				History of syphilis in 1, enlarged thyroid gland and exophthalmos in other.
2		1				1		Of cases discharged: 1 was after childbirth. In fatal case: thrombosis of left external saphena vein, granular kidneys, confluent broncho-pneumonia and septicæmia. Antistreptococcic serum used.
		2	1	1		1		Glycosuria in 2, marked tremor in 2, pigmentation of skin in 3, mitral murmur in 2, gastro-intestinal disturbance in 1, ulceration of cornea in 1. Large vascular thyroid and persistent thymus in fatal case. For another fatal case see Surgical Reports, "Tuberculosis of hip-joint."
								See "Phthisis."
1	1							
1								
1								
19	43							Includes 1 house physician, 1 assistant house surgeon, 21 nurses, 6 wardmaids, and 5 students. Tonsils removed in 3 (in one of these adenoids also). Profuse hæmorrhage in 1.
1	1							Results of corrosive poisoning. In 1 dilatation by bougies, in 1 gastrostomy and subsequent dilatation by bougies.
		7		1		7		Of fatal cases: perforation of left air-passages and necrotic changes in lung in 3; stricture near cardia in 3; in 1 collapse of left lung and sero-pus in pleural sac; extensive dissemination in 3. Gastrostomy in 3. No P.M. in 1.
		1						Cause indeterminate.
3	4	9						
1	8	2	4					In 6 possibly due to gastric ulcer.
1	16	4	16		2	1	3	Of cases discharged: hæmatemesis or history of it in 37, and in the other 2 successful operation for perforation. Melæna in 1, parotitis in 2, thrombosis in leg in 1. Of fatal cases: perforative peritonitis in all; exploration in 3. Ulcer of anterior surface in 2, and at lesser curvature in 2.
1	2					1		In 1 aortic disease, in 1 history of repeated epistaxis. In fatal case melæna also; source not found.
3	2					1		In 1 cætic, in 1 due to violent rotation, in 1 poisoning suspected. Fatal case in infant; no P.M.
				1				Transfer to surgical side. Subsequent separation of adhesions and relief.

TABLE III—

DISEASE.	Number of cases.			Age.								Duration of residence.									
	Total.	M.	F.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	Above 60	Under 1 week.	Wks. 1-2	Wks. 2-4	Mths. 1-2	Mths. 2-4	Mths. 4-6	Mths. 6-9	Mths. 9-12	Above 1 year.	
VI. DISEASES OF THE DIGESTIVE ORGANS— <i>continued.</i>																					
1. <i>Alimentary canal</i> —cont.																					
Malignant disease of stomach	16	8	8	...	...	...	...	4	3	7	2	...	3	6	6	1	...	...	...	...	
Duodenal ulcer . . . . .	2	2	...	...	...	...	...	2	...	...	...	...	...	...	2	...	...	...	...	...	
Diarrhœa and vomiting . . . . .	28	17	11	15	2	4	6	1	...	...	...	16	8	3	1	...	...	...	...	...	
Diarrhœa . . . . .	16	11	5	3	2	1	8	...	2	...	...	6	6	3	1	...	...	...	...	...	
Dysentery . . . . .	2	2	...	...	...	...	2	...	...	...	...	...	1	...	1	...	...	...	...	...	
Colic . . . . .	3	2	1	...	...	...	1	1	1	...	...	2	1	...	...	...	...	...	...	...	
Constipation . . . . .	14	6	8	2	...	4	1	2	1	4	...	4	6	1	2	1	...	...	...	...	
Intussusception . . . . .	8	5	3	8	...	...	...	...	...	...	...	5	1	2	...	...	...	...	...	...	
Band strangulation . . . . .	4	4	...	...	...	...	3	...	...	...	1	4	...	...	...	...	...	...	...	...	
Obstruction, other forms . . . . .	8	4	4	...	...	...	4	1	2	1	...	3	1	...	3	1	...	...	...	...	
Malignant disease of intestine	13	4	9	...	...	...	1	5	1	3	3	4	2	3	3	1	...	...	...	...	
Inflammation of vermiform appendix	47	38	9	1	5	17	15	3	4	1	1	14	3	15	13	2	...	...	...	...	

*continued.*

Cured.		Re- lieved.		Unre- lieved.		Died.		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	
...	...	3	2	...	2	5	4	Of cases discharged: 1 explored, and large tumour of anterior stomach wall found and left. Of fatal cases: pyloric growth in 5, with dilatation of stomach in 2; growth in lesser curvature in 1, and at cardia in 1; colloid carcinoma infiltrating right half of stomach wall and omentum in 1. Local abscess in 2, ascitès in 3, secondary growths in liver in 4, thrombosis of femoral vein in 1, granular kidneys in 1, gall-stones in 1, no P.M. in 1.
11	6	2	...	...	...	6	5	Fatal cases all in infants and young children, and 9 of them in summer or autumn. Shallow ulceration of intestines in 1, patchy collapse of lungs in 2, enlarged mesenteric glands in 2, rickets in 1.
9	4	...	1	...	...	2	...	In case relieved: colitis. Fatal cases both in infants, and without gross lesion.
1	...	1	...	...	...	...	...	In each case contracted abroad.
2	1	...	...	...	...	...	...	
3	4	2	4	...	...	1	...	Fatal case in infant; no P.M.
2	...	...	...	...	...	3	3	Of recoveries: in 1 diagnosis doubtful, in 1 inflation followed by exploration and probable reduction under anæsthetic. Of fatal cases: 4 explored, and in 1 bowel resected; 3 were ileo-cæcal, 2 colic, and 1 enteric; in last bowel had sloughed, and peritonitis ensued. Death in others from shock and exhaustion.
...	...	...	...	...	...	4	...	Small intestine strangulated in all. Exploration in 3. Meckel's diverticulum in 3; band in connection with diseased vermiform appendix in 1. Bowel gangrenous in 2, general peritonitis in 1.
...	3	1	1	...	...	3	...	Includes pelvic adhesions 2, explored and cured; appendicular adhesions, no operation, relieved; twist of hepatic flexure and twist of cæcum, latter due to Meckel's diverticulum, both explored and fatal; double stricture of small intestine, lateral anastomosis, cure; strangulation in a cæcal fossa, exploration, peritonitis, fatal; chronic obstruction with history of hæmatemesis in 1, no operation.
...	...	4	2	1	...	2	4	Situation: rectum 3, sigmoid 4, descending colon 1, ascending colon 2, cæcum 1, lower end of small intestine 1, indeterminate 1. Of cases discharged: colotomy in 1; transfer to Surgical side in 3 (excision, circular enterorrhaphy, and cure in one of these). Of fatal cases: perforative peritonitis in 2 (one of these explored), colotomy in 2, anastomosis in 1, excision in 1.
21	8	2	1	3	...	12	...	First attack in 37, and of these 10 fatal; second attack in 7; recurrent attacks in 3, 1 fatal. Exploration in 18, and in 3 others after transfer to Surgical side. In 11, all fatal, the peritoneum was drained for general peritonitis, with or without removal of appendix; in 4 a local abscess was evacuated; in 2 the appendix was removed. In 1 case operation for general peritonitis was followed by recovery (see 'Brit. Med. Journ.,' Dec. 12th, 1896). Scarlet fever and transfer to fever hospital in 1.

TABLE III—

DISEASE.	Number of cases.			Age.								Duration of residence.								
	Total.	M.	F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60	Under 1 week.	Wks. 1-2	Wks. 2-4	Mths. 1-2	Mths. 2-4	Mths. 4-6	Mths. 6-9	Mths. 9-12	Above 1 year.
VI. DISEASES OF THE DIGESTIVE ORGANS—continued.																				
1. <i>Alimentary canal</i> —cont.																				
Hæmorrhage from bowel . . . . .	5	2	3	1	...	...	3	1	...	...	...	1	2	2	...	...	...	...	...	...
2. <i>Peritoneum.</i>																				
Acute peritonitis . . . . .	1	1	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...
Tuberculous peritonitis . . . . .	27	16	11	5	8	10	3	1	...	...	...	2	1	4	11	8	1	...	...	...
Chronic peritonitis . . . . .	1	...	1	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...
3. <i>Liver.</i>																				
Cirrhosis . . . . .	35	25	10	1	1	3	1	6	7	12	4	3	13	8	9	2	...	...	...	...
Gall-stones . . . . .	13	7	6	...	...	1	2	4	4	2	...	1	1	5	5	1	...	...	...	...
Catarrhal jaundice . . . . .	4	2	2	...	...	...	3	1	...	...	...	...	1	...	1	2	...	...	...	...
Obstructive jaundice . . . . .	6	3	3	1	...	...	1	...	...	2	2	...	...	3	3	...	...	...	...	...
Enlarged gall-bladder . . . . .	1	...	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...
Enlarged liver . . . . .	1	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Acute atrophy of liver . . . . .	1	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...
Hydatids of liver . . . . .	2	2	...	...	...	...	...	...	2	...	...	1	...	1	...	...	...	...	...	...
Tumour of liver . . . . .	4	2	2	...	...	...	...	2	2	...	...	...	...	1	3	...	...	...	...	...
Suppurative pylephlebitis . . . . .	1	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...
4. <i>Various.</i>																				
Malignant disease of pancreas . . . . .	5	3	2	...	...	...	...	...	...	1	4	...	...	3	2	...	...	...	...	...
Malignant tumour of abdomen . . . . .	13	5	8	...	...	...	1	1	5	4	2	1	3	3	5	1	...	...	...	...
Simple tumour of abdomen . . . . .	10	3	7	1	...	...	4	2	1	...	2	2	1	4	3	...	...	...	...	...
Hydatid cyst of abdomen . . . . .	2	...	2	...	...	...	1	1	...	...	...	...	...	1	...	1	...	...	...	...



*continued.*

Cured.		Re- lieved.		Unre- lieved.		Died.		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	
1	3					1		Colitis suspected in 2, ulceration of bowel in 1. Fatal case in a child, source untraced.
1								Cause obscure; no operation.
4	3	7	4	1		4	4	Of cases discharged: exploration in 7, all cured; scarlet fever in 1. Of fatal cases: perforation of bowel in 2, with faecal extravasation in 1 and local abscess in 1; ulceration of bowel in 1 other; caseous broncho-pneumonia in 2; miliary tuberculosis of lungs in 1.
						1		Perihepatitis and perisplenitis, ascites, and dilated heart.
		21	8	2		2	2	Of cases discharged: ascites in 16, of whom 14 were tapped (4 twice), oedema of legs in 3, hæmatemesis in 2, hæmorrhage from bowel in 1, jaundice in 5, delirium in 2, bronchitis in 1, pleurisy in 1, fever in 4, liver enlarged in 23, suicidal tendency in 1. Of fatal cases: liver small in 2, apical pneumonia in 1, suppurating kidneys and uræmia in 1.
4	4	2				1	1	Colic in 10, jaundice in 8, enlarged gall-bladder in 5. Operation refused in 2, 1 died. Exploration in 4, with 1 death from shock.
2	2							
		3	2			1		Liver enlarged in all, spleen enlarged in 3, hæmaturia in 1.
		1						
				1				
						1		1 transferred to Surgical side; in other suppurating cyst incised. P.M.—Secondary abscesses in liver.
				2	2			1 transferred to Surgical side, and subsequently explored, probably sarcoma; nature of others doubtful.
						1		Secondary to abscess around vermiform appendix.
						3	2	Jaundice in 3, lumbar pain in 2, secondary deposits in liver in 4, invasion of portal fissure only in 1, dilated gall-bladder in 3. Growth in head of pancreas in 3, in tail only in 1, whole gland involved in 1. For another case see "Phthisis."
		1	4	3	2	1	2	Ascites in 3, all tapped. Of fatal cases: malignant disease of peritoneum in 1, in others no P.M.
1	1	2	6					Enlarged spleen in 5, median cystic tumour in 1, query gall-bladder in 3, query left lobe of liver in 1, ascites in 3; all tapped.
	2							Suppurating cyst drained in 1, cyst removed in 1.

TABLE III—

DISEASE.	Number of cases.			Age.							Duration of residence.									
	Total.	M.	F.	Under 5	5-10	20	30	40	50	60	Above 60	Under 1 week.	Wks. 1-2	Wks. 2-4	Mts. 1-3	Mts. 3-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Above 1 year.
<b>VII. DISEASES OF THE GENITO-URINARY SYSTEM.</b>																				
Acute nephritis.	17	10	7	2	5	...	3	6	...	1	...	...	3	3	8	2	1	...	...	...
Chronic nephritis	69	53	16	...	...	5	7	13	17	19	8	11	10	25	15	8	...	...	...	...
Tuberculous kidney	3	...	3	...	...	...	1	2	...	...	...	...	...	2	1	...	...	...	...	...
Malignant disease of kidney	2	1	1	2	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...
Cystic kidney	1	...	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...
Pyelitis	1	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...
Hydronephrosis	1	1	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
Pyonephrosis	1	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...
Moveable kidney	11	1	10	...	...	...	2	2	6	1	...	...	4	4	2	1	...	...	...	...
Renal colic	7	7	...	...	...	...	6	1	...	...	...	...	...	5	2	...	...	...	...	...
Nephralgia	1	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...
Paroxysmal hæmoglobinuria	1	1	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
Hæmaturia	1	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...
Albuminuria	3	2	1	...	...	...	1	...	2	...	...	...	2	1	...	...	...	...	...	...
Pyuria	1	...	1	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Retention of urine	1	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Gonorrhœa	1	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Edema <i>sine</i> albuminuria	1	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...

*continued.*

Cured.		Re- lieved.		Unre- lieved.		Died.		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	
2	4	6	2	...	...	2	1	No evidence of scarlet fever in any. Of recoveries: uræmia in 1. Of fatal cases: in 1 measles, empyema, broncho-pneumonia, and suppurative pericarditis; in 1 uræmia and œdema of legs; in 1 abortion and suppression of urine.
...	...	40	7	3	...	10	9	History of scarlet fever in 1, pregnancy in 5, plumbism in 6, gout in 1, alcohol in 6. Of cases discharged: hypertrophied heart in 7, dilated heart in 8, atheromatous vessels in 5, œdema in 23, marked ascites in 4, and cirrhosis of liver in 1 of these, phthisis in 2, bronchitis in 5, emphysema in 1, pleural effusion in 2 (one aspirated), epistaxis in 1, hæmaturia in 1, diarrhœa in 1, renal retinitis in 7, uræmic twitching in 1, uræmic dyspnœa in 2, delirium in 1, mania in 1, refusal of food in 1, eczema in 1. Of fatal cases: kidneys small and granular in 9, large and pale in 3, large and granular in 4. 1 hydronephrotic and other large and smooth in 1, in 2 no P.M. Cardiac hypertrophy in 10, dilatation in 2, mitral obstruction and tricuspid vegetations in 1, aortic incompetence in 1, aortic and mitral incompetence in 1. Cerebral hæmorrhage in 1, cerebral softening in 1, old cicatrix in brain in 1. Uræmia in 7, in one with maniacal outburst, and in one with hemiplegia, but no gross lesion. Pleural effusion in 5; pericarditis in 4, being in one hæmorrhagic and in one purulent; membranous enteritis in 1, cirrhosis of liver in 1, thrombosis of renal and iliac veins in 1.
...	...	2	...	1	...	...	...	Pyonephrosis in 1.
...	...	...	...	1	1	...	...	
...	...	...	...	1	...	...	...	Subsequent exploration on Surgical side showed fibro-myoma of uterus in addition.
1	...	...	...	...	...	...	...	Fever simulating enteric.
...	...	...	1	...	...	...	...	Right-sided. Transfer to Surgical side and subsequent nephrectomy.
...	...	...	...	...	1	...	...	Double pyonephrosis and left hydrothorax. Cause indeterminate.
1	1	6	...	3	...	...	...	Exploration and fixation in 1. 2 transferred to Surgical side, with subsequent exploration and cure.
4	...	...	3	...	...	...	...	Stone in 2 cases removed whilst in Medical ward, and in 2 after transfer. 1 case discharged at own request, and in 2 others no operation. Oxalates in 2 cured on Medical side.
...	...	1	...	...	...	...	...	
...	...	1	...	...	...	...	...	
1	...	...	...	...	...	...	...	Uric acid deposit.
...	1	2	...	...	...	...	...	
...	...	...	1	...	...	...	...	Cause obscure.
...	...	1	...	...	...	...	...	Enlarged prostate.
...	...	1	...	...	...	...	...	
1	...	...	...	...	...	...	...	

TABLE III—

DISEASE.	Number of cases.			Age.								Duration of residence.									
	Total.	M.	F.	Under 5	5-10	10-20	20-30	30-40	40-50	50-60	Above 60	Under 1 week.	Wks. 1-2	Wks. 2-4	Mths. 1-2	Mths. 2-4	Mths. 4-6	Mths. 6-9	Mths. 9-12	Above 1 year.	
VIII. DISEASES OF THE NERVOUS SYSTEM.																					
Acute meningitis . . . . .	5	3	2	2	...	2	...	1	...	...	...	3	2	...	...	...	...	...	...	...	...
Chronic meningitis . . . . .	1	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Tuberculous meningitis . . . . .	7	4	3	3	2	2	...	...	...	...	...	4	2	...	...	1	...	...	...	...	...
Hemiplegia . . . . .	16	9	7	...	...	2	3	4	4	2	1	2	2	5	6	1	...	...	...	...	...
Cerebral hæmorrhage . . . . .	8	8	...	...	...	...	...	...	2	5	1	3	...	5	...	...	...	...	...	...	...
Intra-cranial tumour . . . . .	13	7	6	2	2	1	5	2	1	...	...	...	2	2	3	3	1	2	...	...	...
Headache . . . . .	7	5	2	1	...	...	1	5	...	...	...	2	...	2	3	...	...	...	...	...	...
Birth palsy . . . . .	4	2	2	2	1	1	...	...	...	...	...	1	2	...	1	...	...	...	...	...	...
Sensory aphasia . . . . .	1	1	...	...	...	...	1	...	...	...	...	...	1	...	1	...	...	...	...	...	...
Hydrocephalus . . . . .	1	...	1	1	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
Obscure cerebral disease . . . . .	3	...	3	...	...	...	1	2	...	...	...	...	1	...	2	...	...	...	...	...	...
General paralysis of the insane . . . . .	4	4	...	...	...	...	...	2	...	2	...	1	1	2	...	...	...	...	...	...	...
Melancholia . . . . .	2	1	1	...	...	...	1	1	...	...	...	1	...	...	1	...	...	...	...	...	...
Mania . . . . .	2	...	2	...	...	...	1	...	1	...	...	...	1	...	1	...	...	...	...	...	...
Delusional insanity . . . . .	2	...	2	...	...	...	2	...	...	...	...	1	...	1	...	...	...	...	...	...	...
Obscure mental cases . . . . .	3	2	1	...	...	...	1	1	...	1	...	...	2	1	...	...	...	...	...	...	...
Chorea . . . . .	23	6	17	1	6	15	1	...	...	...	...	...	1	4	13	4	...	1	...	...	...
Hysteria . . . . .	34	10	24	...	...	8	10	9	3	2	2	5	9	9	8	3	...	...	...	...	...
Epilepsy . . . . .	20	13	7	1	7	5	3	1	2	1	...	11	3	3	3	...	...	...	...	...	...



*continued.*

Cured.		Re-lieved.		Unre-lieved.		Died.		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	
						3	2	Suppuration in 4. 2 secondary to ear disease; others not traced. Empyema in 1 ear case. See "Ear."
				1				Syphilitic basal meningitis.
						4	3	Tuberculous broncho-pneumonia in 2; caseous tubercle of peritoneum, kidneys, lungs, and bronchial glands in 1; caseous masses in pons, corpora quadrigemina, and flocculus in 1; caseous bronchial glands in 2.
		3	3	6	4			Right-sided in 13, with aphasia in 6; left-sided in 3. History of syphilis in 3. 2 followed confinement, and 1 occurred during pregnancy. Possibly due to hæmorrhage in 1. Optic neuritis in 1.
		4				4		Right hemisphere in 3, all bursting into ventricles; left in 4; primary ventricular in 1. Right hemianæsthesia in 1. Of fatal cases: chronic interstitial nephritis in 2, in 1 head only examined.
			1	2	2	5	3	Of cases discharged: probable gumma in 1, epileptiform fits and mania in 1, trephining for pressure symptoms, with relief, in 1. Of fatal cases: multiple growths in cerebrum and cerebellum in 1; intra-ventricular growths in 2, in one case involving also pons, medulla, and cervical cord; cystic growth of right frontal lobe in 1, and of right cerebellar hemisphere 1; tuberculous mass pressing on pons and tuberculous meningitis in 1; tuberculous mass pressing on junction of pons and medulla in 1; in 1 general tuberculosis, but no P.M.; right aortic arch in 1.
	1	5	1					Hypermetropia in 1, optic neuritis in 3, fits in 1, phthisis in 1, vomiting in 1, probable intra-cranial syphilis in 1.
				2	2			Convulsions in 1, athetosis in 1, mental defect in 2.
		1						Result of concussion.
				3				In 1 cerebral syphilis and in 2 sinus thrombosis suspected.
				4				1 trephined for relief of local head pain, and subsequently re-transferred to Bethlem.
				1	1			1 transferred to infirmary.
				1				1 transferred to Bethlem Hospital.
				2				1 transferred to infirmary.
6	14		3					First attack in 20, second in 2, third in 1. Rheumatism in 8, family history of it in 3 more, pregnancy in 1, attributed to fright in 3. Mitral disease in 12, dementia in 2, glycosuria in 1, scarlet fever contracted in hospital in 1 case.
6	19	4	5					Hystero-epilepsy in 1, convulsions in 3, paraplegia 3, brachial monoplegia in 1, contracted foot in 1, ataxia in 1, tremor in 1, vomiting in 7, dysphagia in 2, aphonia in 1, polyuria in 1, retention of urine in 1, hyperæsthesia in 2, head pain in 4, in 3 of these traumatic, neurasthenia in 4.
1	1	10	5			2	1	No gross lesion in fatal cases. Lead poisoning in 1, a youth.

TABLE III—

DISEASE.	Number of cases.			Age.								Duration of residence.									
	Total.	M.	F.	Under 5	5-10	-20	-30	-40	-50	-60	Above 60.	Under 1 week.	Wks. 1-2	Wks. 2-4	Mths. 1-2	Mths. 2-4	Mths. 4-6	Mths. 6-9	Mths. 9-12	Above 1 year.	
VIII. DISEASES OF THE NERVOUS SYSTEM— <i>continued.</i>																					
Infantile convulsions . . . . .	7	3	4	6	1	...	...	...	...	...	...	4	2	...	1	...	...	...	...	...	
Myelitis . . . . .	7	5	2	...	...	1	1	2	3	...	...	...	...	1	2	3	...	1	...	...	
Paraplegia . . . . .	10	6	4	...	2	2	1	3	...	1	1	...	...	2	4	3	...	1	...	...	
Lateral sclerosis . . . . .	6	1	5	...	...	...	1	2	2	1	...	...	1	2	1	1	1	...	...	...	
Disseminated sclerosis . . . . .	11	9	2	...	...	1	4	2	2	1	1	1	...	9	1	...	...	...	...	...	
Locomotor ataxy . . . . .	9	6	3	...	...	...	...	5	3	1	...	2	1	2	3	1	...	...	...	...	
Sciatica . . . . .	4	2	2	...	...	...	2	1	...	1	...	...	...	...	2	...	2	...	...	...	
Neuralgia . . . . .	7	3	4	...	1	...	3	2	1	...	...	2	2	2	1	...	...	...	...	...	
Vertigo . . . . .	1	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	
Peripheral neuritis . . . . .	4	2	2	...	...	...	...	3	...	1	...	1	...	1	1	...	1	...	...	...	
Obscure cases . . . . .	3	2	1	...	...	...	...	1	1	1	...	...	...	2	1	...	...	...	...	...	
IX. POISONING.																					
Alcoholism—																					
(1) Paralysis . . . . .	3	1	2	...	...	...	2	1	...	...	...	...	...	...	...	2	1	...	...	...	
(2) Acute poisoning . . . . .	5	3	2	...	...	...	1	2	1	1	...	5	...	...	...	...	...	...	...	...	
Plumbism . . . . .	30	27	3	...	...	...	11	19	...	...	...	6	15	7	2	...	...	...	...	...	
Opium—																					
(1) Morphinomania . . . . .	1	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	
(2) Acute poisoning . . . . .	3	1	2	1	...	...	1	...	1	...	...	3	...	...	...	...	...	...	...	...	
Carbolic acid . . . . .	5	1	4	...	...	2	1	1	...	...	1	5	...	...	...	...	...	...	...	...	
Oxalic acid . . . . .	1	1	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	
Hydrochloric acid . . . . .	5	3	2	1	...	...	2	1	1	...	1	3	...	2	...	...	...	...	...	...	
Nitric acid . . . . .	1	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	
White precipitate . . . . .	2	1	1	1	...	...	...	...	1	...	...	2	...	...	...	...	...	...	...	...	
Copper sulphate . . . . .	1	...	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	
Zinc sulphate . . . . .	1	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	
Ammonia . . . . .	2	1	1	...	...	...	1	...	...	...	1	...	1	1	...	...	...	...	...	...	
Chloral hydrate . . . . .	1	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	
Atropine . . . . .	1	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	
Belladonna . . . . .	1	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	

*continued.*

Cured.		Re-lieved.		Unre-lieved.		Died.		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	
2	3	...	...	...	...	1	1	No P.M. on fatal cases.
...	...	...	1	4	1	1	...	In fatal case dorsal myelitis and gangrenous cystitis.
1	...	2	5	1	1	...	...	Caries in 4, hæmorrhage in 1.
...	...	...	3	1	2	...	...	
...	...	2	...	7	2	...	...	Lead poisoning in 1, mental impairment in 2, detachment of retina in 1.
...	...	...	3	6	...	...	...	Gastric crises in 5, lightning pains in 2, Charcot's joints in 1, retention of urine in 1.
...	...	1	2	1	...	...	...	Malignant disease in pelvis in 1.
2	3	...	...	1	1	...	...	Neurectomy in 1 for infra-orbital neuralgia and cure. Transfer to Surgical side in 1.
...	...	1	...	...	...	...	...	
...	...	2	...	2	...	...	...	
1	...	1	1	...	...	...	...	Cervical caries suspected in 1.
1	2	...	...	...	...	...	...	
3	...	...	...	...	...	...	2	Delirium in 2, both fatal, and in 1 of these interstitial nephritis and hypostatic pneumonia.
24	3	3	...	...	...	...	...	13 painters, 1 plumber, 1 engine cleaner, 1 lead caster, 1 plate moulder, 2 printers, 1 potman, 1 hairdresser, 1 seed packer. Colic in all, albuminuria in 9, neuritis in 1, alcoholism in 2, hæmorrhage from bowel in 1, pyuria in 1.
...	...	1	...	...	...	...	...	Transferred to Virginia Water.
...	2	...	...	...	...	1	...	2 suicidal.
1	4	...	...	...	...	...	...	3 suicidal. Olive-green urine in 1.
...	...	...	...	...	...	1	...	
2	...	1	...	...	...	1	1	1 suicidal. Perforation of stomach in 1 fatal case; inhalation of fumes, bronchitis, and tracheotomy in another. Œsophageal stricture in 1; see "Œsophageal obstruction" also.
...	...	...	...	...	...	1	...	
1	1	...	...	...	...	...	...	1 suicidal, 1 accidental.
...	1	...	...	...	...	...	...	Suicidal.
...	1	...	...	...	...	...	...	Accidental.
1	1	...	...	...	...	...	...	1 accidental, other probably suicidal.
...	...	...	1	...	...	...	...	
1	...	...	...	...	...	...	...	Eye-drops, equivalent to 1 grain of sulphate of atropine, swallowed.
1	...	...	...	...	...	...	...	Suicidal. Glycerine of belladonna taken. Delirium.





continued.

Cured.		Re- lieved.		Unre- lieved.		Died.		REMARKS.
M.	F.	M.	F.	M.	F.	M.	F.	
...	...	...	...	...	...	1	...	P.M. negative.
1	1	...	...	...	...	...	...	1 accidental.
...	1	...	...	...	...	...	...	Suicidal. Jaundice.
1	...	...	...	...	...	...	...	
2	...	...	...	...	...	...	...	Fish poisoning in 1.
...	...	...	...	...	...	...	...	
...	...	...	...	...	...	4	...	Sinus pyæmia in 2, septicæmia in 2. Operation in 3. Anti-streptococcic serum used in 2.
7	2	3	2	5	5	4	1	Ligature of carotids in 1, <i>vide</i> 'Medico-Chir. Trans.'
0	8	...	2	...	...	...	...	
3	1	...	...	...	...	...	...	Attempted suicide in 3.
25	19	4	4	1	3	4	...	Of fatal cases: in 1 muscular dystrophy and malignant scarlet fever; in others marasmus.
...	...	...	...	...	...	...	...	
...	...	...	...	...	...	1	...	Transferred to Adelaide Ward.
...	...	...	1	...	3	...	...	3 transferred to Surgical side.
...	1	...	4	...	...	...	1	4 transferred to Surgical side. Case relieved tapped only. In fatal case peritonitis and atrophic kidney.
...	...	...	...	...	...	1	...	
...	1	...	...	...	1	...	...	Operation in 1, transfer to Surgical side in 1.
...	1	...	...	...	...	...	...	Fallopian tube removed.
...	1	...	1	...	...	...	...	Exploration in 1.
546	433	312	228	104	70	214	129	
{	{	{	{	{	{	{	{	
979	540	174	343	...	...	...	...	
{	{	{	{	{	{	{	{	
2036	...	...	...	...	...	...	...	

TABLE IV.—*Table of Mortality.*

DISEASE.	Total.		Age.										Mortality per cent.
	No. discharged.	No. died.	Under 2	2-5	10	20	30	40	50	60	70	Above 70	
1. GENERAL DISEASES.													
Measles . . . . .	12	7	4	2	1	...	...	...	...	...	...	...	36·84
Scarlet fever . . . . .	18	4	1	...	1	1	1	...	...	...	...	...	18·18
Varicella . . . . .	2	1	...	1	...	...	...	...	...	...	...	...	33·33
Influenza . . . . .	14	1	...	...	...	...	...	...	...	1	...	...	6·66
Enteric fever <sup>1</sup> . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria <sup>1</sup> . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheritic paralysis . . . . .	2	1	...	1	...	...	...	...	...	...	...	...	33·33
Septicæmia . . . . .	2	1	...	...	...	...	1	...	...	...	...	...	33·33
Syphilis . . . . .	3	2	2	...	...	...	...	...	...	...	...	...	40
Acute rheumatism . . . . .	142	1	...	...	...	...	1	...	...	...	...	...	·69
Rickets . . . . .	3	3	3	...	...	...	...	...	...	...	...	...	50
Diabetes mellitus . . . . .	4	1	...	...	...	...	...	1	...	...	...	...	20
Anæmia . . . . .	30	1	...	...	1	...	...	...	...	...	...	...	3·22
Pernicious anæmia . . . . .	...	1	...	...	...	...	...	...	...	1	...	...	...
Lymphadenoma . . . . .	2	2	...	...	...	1	...	...	...	1	...	...	50
General tuberculosis . . . . .	1	6	1	2	1	1	1	...	...	...	...	...	85·71
Lardaceous disease . . . . .	...	1	...	...	...	...	1	...	...	...	...	...	...
Hydrophobia . . . . .	...	1	...	...	...	...	...	1	...	...	...	...	...
2. DISEASES OF THE SKIN.													
Pemphigus . . . . .	1	1	...	...	...	...	...	...	...	1	...	...	50
3. DISEASES OF THE RESPIRATORY SYSTEM.													
Malignant disease of trachea . . . . .	...	1	...	...	...	...	...	...	...	...	1	...	...
Chronic bronchitis . . . . .	8	2	...	...	...	...	1	...	...	1	...	...	20
Broncho-pneumonia . . . . .	33	7	4	2	1	...	...	...	...	...	...	...	17·5
Acute pneumonia . . . . .	48	9	...	...	...	...	1	3	3	2	...	...	15·78
Phthisis . . . . .	44	22	3	1	1	4	2	5	5	1	...	...	33·33
Malignant disease of lung . . . . .	...	1	...	...	...	...	1	...	...	...	...	...	...
Fibroid disease of lung . . . . .	...	1	...	...	...	...	...	...	1	...	...	...	...
Collapse of lung . . . . .	...	1	1	...	...	...	...	...	...	...	...	...	...
Hæmoptysis . . . . .	9	3	...	...	...	...	2	1	...	...	...	...	25
Bronchiectasis . . . . .	1	1	...	...	1	...	...	...	...	...	...	...	50
Pleurisy . . . . .	60	1	...	...	...	...	...	1	...	...	...	...	1·63
Pneumothorax . . . . .	4	1	...	...	...	...	1	...	...	...	...	...	20
Empyema . . . . .	19	5	1	2	...	...	1	1	...	...	...	...	20·83
Mediastinal growth . . . . .	3	6	1	...	...	1	...	1	1	1	1	...	66·66
4. DISEASES OF THE CIRCULATORY SYSTEM.													
Pericarditis . . . . .	2	1	1	...	...	...	...	...	...	...	...	...	33·33
Mitral incompetence . . . . .	17	2	...	...	...	1	1	...	...	...	...	...	10·52
Mitral obstruction and incom- petence . . . . .	37	2	...	1	...	...	...	...	...	1	...	...	5·12

<sup>1</sup> See "Special Abstract."

TABLE IV—*continued.*

DISEASE.	Total.		Age.										Mortality per cent.
	No. discharged.	No. died.	Under 2	2-5	-10	-20	-30	-40	-50	-60	-70	Above 70	
4. DISEASES OF THE CIRCULATORY SYSTEM— <i>continued.</i>													
Aortic disease . . . . .	13	2	...	...	...	...	...	...	...	2	...	...	13·33
Aortic and mitral disease . . . . .	36	10	...	...	...	...	1	3	4	2	...	...	21·73
Ulcerative endocarditis . . . . .	...	4	...	...	...	...	2	2	...	...	...	...	...
Thoracic aneurysm . . . . .	8	4	...	...	...	...	...	2	...	2	...	...	33·33
Abdominal aneurysm . . . . .	...	1	...	...	...	...	1	...	...	...	...	...	...
Fatty heart . . . . .	1	1	...	...	...	...	...	...	...	...	1	...	50
Dilated heart . . . . .	...	1	...	...	...	...	...	...	...	1	...	...	...
Arterial disease . . . . .	2	1	...	...	...	...	...	...	...	1	...	...	33·33
Venous thrombosis . . . . .	3	1	...	...	...	...	...	...	...	1	...	...	25
5. DISEASES OF THE DUCTLESS GLANDS.													
Exophthalmic goitre . . . . .	4	1	...	...	...	...	...	1	...	...	...	...	20
6. DISEASES OF THE DIGESTIVE ORGANS.													
Malignant disease of œsophagus . . . . .	8	7	...	...	...	...	...	...	1	1	4	1	46·66
Gastric ulcer . . . . .	39	4	...	...	...	...	2	2	...	...	...	...	9·30
Hæmatemesis . . . . .	3	1	...	...	...	...	...	...	1	...	...	...	25
Malignant disease of stomach . . . . .	7	9	...	...	...	...	...	1	2	4	2	...	56·25
Diarrhœa and vomiting . . . . .	17	11	9	1	1	...	...	...	...	...	...	...	39·28
Diarrhœa . . . . .	14	2	2	...	...	...	...	...	...	...	...	...	12·5
Constipation . . . . .	13	1	1	...	...	...	...	...	...	...	...	...	7·14
Intussusception . . . . .	2	6	4	1	1	...	...	...	...	...	...	...	75
Band strangulation . . . . .	...	4	...	...	...	...	3	...	...	1	...	...	...
Obstruction, other forms . . . . .	15	3	...	...	...	...	2	...	1	...	...	...	16·66
Malignant disease of intestine . . . . .	6	6	...	...	...	...	...	2	2	...	2	...	50
Inflammation of vermiform appendix . . . . .	36	12	...	1	1	1	6	1	1	...	1	...	33·3
Hæmorrhage from bowel . . . . .	4	1	...	1	...	...	...	...	...	...	...	...	20
Tuberculous peritonitis . . . . .	19	8	...	3	2	2	...	1	...	...	...	...	29·62
Chronic peritonitis . . . . .	...	1	...	...	...	...	...	...	1	...	...	...	...
Cirrhosis of liver . . . . .	31	4	1	...	...	1	...	...	2	...	...	...	11·42
Gall-stones . . . . .	11	2	...	...	...	...	...	1	1	...	...	...	15·38
Pylephlebitis . . . . .	...	1	...	...	...	1	...	...	...	...	...	...	...
Malignant disease of pancreas . . . . .	...	5	...	...	...	...	...	...	...	1	3	1	...
Malignant disease of abdomen . . . . .	10	3	...	...	...	...	...	1	1	...	...	1	23·07
7. DISEASES OF THE GENITO-URINARY SYSTEM.													
Acute nephritis . . . . .	14	3	...	1	...	...	...	1	...	1	...	...	17·64
Chronic nephritis . . . . .	50	19	...	...	...	...	3	2	7	6	1	...	27·53
Malignant disease of kidney . . . . .	1	...	1	...	...	...	...	...	...	...	...	...	50
Pyonephrosis . . . . .	...	1	...	...	...	...	...	1	...	...	...	...	...
8. DISEASES OF THE NERVOUS SYSTEM.													
Acute meningitis . . . . .	...	5	2	...	...	2	...	1	...	...	...	...	...
Tuberculous meningitis . . . . .	...	7	...	3	2	2	...	...	...	...	...	...	...
Cerebral hæmorrhage . . . . .	4	4	...	...	...	...	...	...	2	2	...	...	50





TABLE V.—*Cases of Infectious Disease occurring in the Hospital.*

Initials.	Sex.	Age.	Disease for which admitted.	Disease originating in hospital.	Date of onset.	Duration of previous residence in hospital.	Result.	Remarks.
A. W.	M.	4 $\frac{2}{12}$ yrs.	Cleft palate	Measles	Mar. 16	41 days	C. Apr. 15	Contracted in Victoria Ward.
F. K.	M.	2 $\frac{6}{12}$ yrs.	Papilloma of larynx	"	May 14	—	C. " 29	Ditto.
F. F.	M.	3 yrs.	Burn	"	Mar. 29	32 days	C. May 31	Ditto.
F. R.	M.	2 $\frac{3}{4}$ yrs.	Tuberculous hip-joint	"	Mar. 30	82 "	C. June 9	Ditto.
E. A.	M.	6 yrs.	Phthisis	"	Nov. 25, 1895	28 "	C. Jan. 12	Ditto.
E. B.	F.	2 mos.	Jaundice	"	Mar. 17	91 "	D. Mar. 18	Ditto.
E. D.	F.	3 yrs.	Tuberculosis	"	Apr. 3	57 "	D. May 14	Ditto.
W. S.	F.	2 yrs.	Mastoid abscess	"	Nov. 12, 1895	252 "	C. June 13	Ditto.
W. W.	F.	"	Tuberculous hip-joint	"	Mar. 16	104 "	C. May 16	Ditto.
K. S.	F.	26 yrs.	—	"	July 1	—	C. July 15	Probationer.
L. T.	M.	11 mos.	Talipes equino-varus	Scarlet fever	July 23	46 days	C. Aug. 24	Contracted in Victoria Ward.
F. P.	M.	"	Mastoid abscess	"	Aug. 26	51 "	C. Sept. 25	Ditto.
P. S.	M.	13 yrs.	Inflammation of vermiform appendix	"	Oct. 12	20 "	Tr. Oct. 28	Contracted in Florence Ward.
G. C.	M.	7 yrs.	Chorea	"	Nov. 8	29 "	C. Dec. 13	Ditto.
H. P.	M.	12 yrs.	Idiopathic myopathy	"	Nov. 9	13 "	D. Nov. 19	Ditto.
M. R.	F.	26 yrs.	—	"	Jan. 9	—	C. Mar. 2	Nurse.
A. T.	F.	28 yrs.	—	"	Feb. 4	—	C. " 21	Nurse.
F. C.	F.	"	—	"	Sept. 1	—	C. Oct. 16	Nurse; contracted in Florence Ward.
K. H.	F.	25 yrs.	—	"	Oct. 26	—	D. " 4	Ditto.
L. B.	F.	31 yrs.	—	"	Oct. 30	—	C. Dec. 13	Ditto.
M. B.	F.	25 yrs.	—	Enteric fever	Nov. 15	—	C. Jan. 27	Nurse.
M. T.	F.	2 yrs.	Cleft palate	Diphtheria	Aug. 27	15 days	C. Sept. 20	Contracted in Victoria Ward.
D. H. C.	F.	2 $\frac{4}{12}$ yrs.	Tuberculous peritonitis	"	Sept. 8	38 "	D. " 10	Ditto.
H. R.	F.	26 yrs.	—	Mumps	May 20	—	C. June 8	Ditto.
L. M. B.	F.	"	—	"	May 20	—	C. " 4	Ditto.

## SPECIAL ANALYSES AND ABSTRACTS.

### I. GENERAL DISEASES.

#### 1. DIPHTHERIA.

The antitoxin treatment was continued during 1896, and the following tables are prepared and arranged in the same way as in last year's report. After November 24th standardised serum, prepared at the laboratories of the Royal Colleges of Physicians and Surgeons, was substituted for that issued by the British Institute of Preventive Medicine. Five cases only had been treated with the new serum up to the end of the year, and these cases are included in the tables. Treatment was in each case commenced immediately after admission to hospital.

The clinical diagnosis of diphtheria did not receive bacteriological confirmation in 53·27 per cent. of the cases, mainly because cultures were not reported upon during the summer quarter. The bacteriological examination in cases which recovered showed a mixed culture in 23 and a pure culture in 11 instances, whilst the fatal cases yielded a mixed culture in 8 and a pure culture in 8 instances.

TABLE I.—*Cases treated with antitoxin in 1896.*

Ages.	Duration of disease.										Mortality per cent.		
	1 day.		2 days.		3 days.		4 days.		5 or more days.			Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.			
Under 1 year	1	...	1	1	2	2	...	...	1	1	5	4	80
1-2 years	2	...	4	4	2	1	3	1	3	2	14	8	57.14
2-3 "	4	...	1	1	3	1	2	2	9	3	19	7	36.84
3-4 "	...	...	6	2	6	1	4	1	5	3	21	7	33.33
4-5 "	2	1	3	...	4	4	...	...	6	3	15	8	53.33
5-10 "	3	1	3	...	3	1	7	1	9	2	25	5	20
10-15 "	...	...	2	...	1	...	...	...	...	...	3	...	...
15-20 "	...	...	...	...	...	...	...	...	1	...	1	...	...
20 and upwards	1	...	1	...	1	...	1	...	...	...	4	...	...
Total . . .	13	2	21	8	22	10	17	5	34	14	107	39	...
Mortality per cent.	..	15.38	...	38.09	...	41.0	...	29.41	...	41.17	...	36.44	...

TABLE II.—*Mortality for different age periods during 1896.*

Age.	Cases.	Deaths.	Mortality per cent.
Under 5 years	74	34	45·94
„ 10 „	99	39	39·37
„ 15 „	102	39	38·23
All ages	107	39	36·44

Of the total admissions 69·15 per cent. were patients under 5 years of age.

„ „ 23·36 „ „ between 5 and 10 years of age.

„ „ 2·8 „ „ between 10 and 15 years of age.

„ „ 4·67 „ „ over 15 years of age.

TABLE III.—*Laryngeal diphtheria and tracheotomies.*

Ages.	Laryngeal cases.			Tracheotomies.		
	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	Mortality per cent.
Under 1 year	2	2	100	1	1	100
1—2 years	11	7	63·63	8	7	87·5
2—3 „	15	7	46·66	14	6	42·85
3—4 „	9	3	33·33	6	3	50
4—5 „	8	6	75	8	6	75
5—10 „	15	5	33·33	14	4	28·57
10—15 „	...	...	...	...	...	...
15 and upwards	...	...	...	...	...	...
Total . . .	59	29	49·15	51	27	52·94
Percentage of tracheotomies 86·44.				Larynx in no case involved after admission.		



TABLE IV.—*Complications arising during 1896.*

Ordinary complications.	No. of cases.	Percentage.	Complications due to antitoxin.	No. of cases.	Percentage.
Albuminuria . . .	30	28·03	Rash . . . . .	30	28·03
Paralysis . . . .	15	14·01	Joint pains . . .	5	4·6
Broncho-pneumonia .	7	6·54	Fever without rash .	1	·93
Bronchitis . . . .	5	4·6	Abscess at site of injection	1	·93
Epistaxis . . . . .	2	1·86			
Hæmorrhagic rash . .	2	1·86			
Suppurating cervical glands	1	·93			
Convulsion . . . .	1	·93			
Conjunctivitis . . .	3	2·8			
Otitis media . . . .	3	2·8			

TABLE V.—*Amount of antitoxin used and dosage.*

	Amount given.	Number of patients.	Number of injections.	Average dose.	Average number of injections.	Average amount per case.
Fatal cases .	1090 c.c.	39	53	20·5 c.c.	1·3	27·9 c.c.
Recoveries .	1680 c.c.	68	103	16·3 c.c.	1·5	24·7 c.c.
All cases .	2770 c.c.	107	156	17·7 c.c.	1·4	25·8 c.c.

The average persistence of the exudate, in days, after treatment was commenced, was in those cases which recovered during the year 5·1.

The average duration of life, in days, after admission, in fatal cases during the year was 2·4.

## 2. ENTERIC FEVER.

During 1896 the number of cases of enteric fever treated to a termination was 62, and the deaths were 7, giving a mortality of 11·2 per cent.

The admissions were distributed as follows:—January, 6 (1 death); February, 2; March, 0; April, 1; May, 1 (died); June, 5; July, 4; August, 9 (2 deaths); September, 8 (3 deaths); October, 11; November, 5 (1 died in 1897); December, 3.

Of these admissions 9 remained in hospital in 1897, and with one exception resulted in recovery; whilst included in the 62 cases mentioned as treated to a termination were 16 admitted during 1895, *i.e.* October, 1; November, 8; and December, 7. No deaths occurred among these.

The average residence of each case was 51·8 days; of those which terminated in recovery, 55·9 days; and of those which proved fatal, 14·6 days.

The details as to age and sex incidence are given in Table III of this Report.

Of the deaths 1 resulted from septicæmia on the 22nd day of the disease; the fever here complicated pregnancy, but abortion did not occur. Two deaths

occurred on the 20th and 23rd days respectively from cardiac failure, 2 probably from perforation of bowel on the 23rd and 28th days, 1 from hæmorrhage on the 34th day, and 1 from cerebellar abscess on the 99th day. In 1 case there was reason to believe that the fatal issue occurred during a relapse.

Twenty-two cases came under observation in the 1st week of the disease, 27 in the 2nd, 9 in the third, and 4 later.

The onset in 6 cases was quite acute.

A profuse eruption was present in 9, a scanty eruption in 48 cases. In the rest the eruption was not noticed. An erythematous rash appeared in 1, a papulo-erythematous rash in 1, and urticaria in 1.

Splenic enlargement was detected in 46 cases, absent or not detected in 16, but in 3 of the latter the patient was admitted late in the disease, *i.e.* at the end of the third week or later.

In 34 cases the tongue was described as typical. Diarrhœa was present in 22 cases, and constipation in 30. Vomiting occurred during the course of the disease in 24 cases.

In 7 cases hæmorrhage from the bowel was observed, the earliest instance being on the 11th and the latest on the 40th day of the disease. Epistaxis was noted in 5 cases, and bleeding gums in 1.

Laryngitis was found in 1 (fatal) case. Bronchitis was more or less severe in 22. Pleurisy occurred twice.

Transient albuminuria was present in 15 cases; albumen was also found in the urine of 3 of the fatal cases. Retention of urine occurred in 4 cases.

Periostitis of sacrum occurred once, and of humerus once. Suppurative otitis media was found 7 times. Abscess of buttock occurred in 1 case.

Abdominal pain was present in 17 cases.

Headache was a prominent symptom in 37 cases, delirium was present in 11, and transitory dementia in 1.

The temperature exceeded 104° F. in 36 cases. The duration of fever whilst under observation varied from 3 to 34 days, the average duration being 15·4 days and the average maximum temperature 104·1° F.

Single rigor occurred during the progress of the disease in 2 instances, on the 22nd and 23rd days. In 1 other two rigors occurred on the 30th and 36th days, and in 1 rigors commenced on the 17th day of observation, and were continued almost daily for a week, when recovery ensued. In only 1 case was there suspicion of femoral thrombosis.

True relapse occurred in 11 instances, the earliest being on the 17th day and the latest (a third relapse) on the 80th day. The days of relapse, so far as could be ascertained, were 17th (?), 21st (twice), 26th (twice), 29th, 30th, 33rd, 38th, 47th, 53rd, 58th (second relapse), 80th (third relapse). The duration of the relapse varied from 10 to 28 days, the average being 15·1 days. The maximum temperature during relapse varied from 103° F. to 105·2° F., the average maximum being 104° F. In 9 cases during relapse a fresh crop of rose spots was observed, and in the case which relapsed 3 times a fresh crop accompanied each relapse. In 3 a fresh enlargement of the spleen occurred. In the only case in which diarrhœa was noted during relapse there was also hæmorrhage from the bowel and albuminuria.

Two cases occurred in nurses who had been nursing enteric fever cases out-

side the hospital; in 1 case the attack appeared to follow indulgence in oysters fourteen days previously, and in 1 a meal of mussels five days prior to attack.

Of the fatal cases, in 2 there was no P.M. examination; in all the others the typical ulceration of the small intestine was found, and in 1 the colon also was extensively ulcerated. The case complicated by cerebellar abscess is abstracted separately.

### 3. ENTERIC FEVER; CEREBELLAR ABSCESS; DEATH.

G. E—, æt. 15, female, admitted September 28th, died December 15th, 1896. No history of previous illness of any kind. Present illness commenced three weeks before admission with sore throat, headache, diarrhœa, and malaise. A week later vomiting became troublesome.

When admitted the patient was somnolent and deaf, her tongue dry and brown, pulse 108 and feeble, resp. 32, and temp. 104.4° F. No signs of disease were found in the lungs or heart. The abdomen was distended, so that the spleen could not be felt; a scanty rose rash was present. The urine contained a trace of albumen.

During the first ten days her condition altered very little; the temperature, which daily averaged about 104° or 105° F., being controlled by cold sponging; the rash spread slightly, appearing on the chest, arms, and hands; the spleen was definitely enlarged, and nocturnal delirium constant; the bowels were constipated, but vomiting had ceased. Deafness was very marked, but no otorrhœa occurred until October 6th; on that day a blood-stained discharge issued from the left ear, and in a day or two a similar discharge became established from the right ear and also from the nose. Rose spots continued to appear until October 19th, the discharge from the ears diminished, but the patient remained drowsy and very restless.

Improvement commenced about October 20th, and the temperature was normal by the 25th, remaining so for twenty-six days; but despite the use of enemata the bowels remained obstinately constipated and the tongue dirty, whilst the mental condition improved but very slowly. On October 30th vomiting again occurred, and from that date until November 12th the patient was sick on an average once every day. Nothing could be found to account for the vomiting; the ocular fundi were normal, but hearing was still much impaired. Two small abscesses formed in the left axilla and discharged about this time. The pulse continued rapid.

On November 24th, for reason unexplained, the temperature began to rise again, and the patient vomited; three days later the temperature was 103° F., but almost immediately fell to normal. The bowels were now acting naturally, and food was taken with good appetite. As a result of examination of the ears on December 1st double suppurative otitis media with large destruction of the membranes was found. In addition to the use of antiseptic irrigation the insufflation of boracic acid and iodoform was recommended.

Vomiting recommenced on December 3rd, and the patient was obviously not so well. It being suspected that the iodoform had something to do with this, its use was discontinued. In spite of all treatment and the adoption of rectal

feeding the vomiting persisted, and it was noted that the girl was relapsing into her former drowsy and apathetic condition. The pupils were dilated and sluggish, but there was still no change in the fundi; the knee-jerks were absent, emaciation was rapid, the temperature was rising again, and the pulse rapid (132) and feeble. The ears were not now discharging, but there was a tender spot behind the left.

In view of the serious condition of the patient it was determined to explore the lateral sinus. This was done on October 12th, the left internal jugular vein being first ligatured. The vein was collapsed, and surrounded by infiltrated connective tissue and enlarged glands. The sinus was found thrombosed, but the clot was not foetid. After removal of the clot the sinus was plugged. The girl's condition during operation was very critical, and never improving, three days later she died.

*Post-mortem.*—Evidences of past ulceration in the form of smooth linear cicatrices corresponding to the agminate glands were found in the lower part of the small intestine, and particularly in the neighbourhood of the cæcum. The left jugular vein had been ligatured and divided in the neck; its contents both above and below consisted of black and apparently healthy clot. The left mastoid antrum had been laid freely open, the groove for the lateral sinus explored, and the sinus itself incised. Between the posterior end of the groove in the petrous bone and the torcula the clot had a septic appearance. The whole white centre of the left lobe of the cerebellum was converted into an abscess cavity, which ruptured during removal of the brain. There was no meningitis. The right wrist-joint was full of pus, the liver pale and friable, spleen large and soft, cardiac muscle soft and very pale. No other lesion.

#### 4. ACUTE RHEUMATISM; HÆMORRHAGIC PERICARDITIS; EARLY ENDOCARDITIS; DEATH.

J. S—, æt. 20, carman, admitted August 17th, died August 23rd, 1896. Mother rheumatic. No previous illness. Present illness attributed to exposure to wet, and commenced six days before admission with sore throat, pain in large joints of lower extremities, ultimately extending to arms also, and great pain in the left side of the chest.

On admission the patient was flushed and feverish, but bathed in a profuse sour perspiration. The temperature was 103° F. and the pulse 110, regular, soft, and full. The tongue was thickly coated with white fur, and the bowels were confined. All the large joints of the upper and lower extremities were involved, being acutely tender and swollen; the metacarpo-phalangeal and big toe joints were in a similar condition. The area of cardiac dulness was considerably increased, extending from the right sternal edge to a point three quarters of an inch outside the nipple line, and reaching above nearly to the second rib. The impulse was visible just internal to the nipple line, action regular, sounds rather faint, no murmurs. Although there was slight cough, no abnormal signs were found in the lungs; the abdomen also was healthy. The fauces were congested, and the urine contained a trace of albumen.



Under the influence of salicylate of sodium during the next five days the temperature gradually fell to 99·4° F., the joint pains and swellings diminished, but there was no alteration in the area of cardiac dulness, and a localised systolic murmur became audible at the apex. The patient began to vomit, and became very deaf.

On the sixth day of observation the inner side of the right foot was found to be much discoloured,—in fact, purple; the temperature began rapidly to rise, reaching 106·4° F., which, by sponging with iced water, was reduced to 103° F. Coincidentally with this the circulation rapidly failed, and death ensued.

*Post-mortem.*—The pericardium was intensely inflamed, and contained eight ounces of deeply blood-stained effusion; there were also numerous subserous hæmorrhages. The heart was of normal size, its muscle soft and friable, and a fringe of quite recent granulations was found on each aortic cusp. The lower lobes of the lungs were in a condition of hypostatic pneumonia. The kidneys were moderately swollen and their texture indistinct. The tissues of the right foot were uniformly infiltrated with dark blood, but no gross vascular lesion was found.

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## II. DISEASES OF THE CIRCULATORY SYSTEM.

### 1. INTRA-PERICARDIAL AORTIC ANEURYSM COMMUNICATING WITH SUPERIOR VENA CAVA; OBLITERATION OF VENA CAVA BELOW THE COMMUNICATION.

F. P.—, æt. 37, sweep, admitted October 15th, died December 15th, 1895. No evidence of hereditary disease. Subject to winter cough; one attack of rheumatism three years ago. A moderate man. No history of syphilis could be obtained.

Symptoms commenced suddenly on April 11th with cough and swelling of face and neck. He attended as an out-patient from April 14th until admission, the diagnosis being double aortic disease and probably aneurysm. During the time the face and neck were much swollen, and the veins on the front of the chest engorged. No positive signs of aneurysm were present, and the laryngeal tissues were described as being swollen, but the movements of the vocal cords were normal. On October 13th it was noticed that the murmur heard to the right of the sternum was continuous in character, running through systole into diastole without a break. The heart was much hypertrophied.

On admission two days later the eyes were nearly closed and the features obliterated by a uniform and symmetrical swelling of face, which also involved the neck. Cyanosis was considerable, and a network of varicose veins traversed the abdomen and front of the chest, extending also to the right arm. The cardiac impulse was in the sixth space outside the nipple, and cardiac dulness extended upwards to become continuous with a dull area over the manubrium and upper intercostal spaces close to the sternum; there was no extension to the right of the sternum below. A double aortic murmur was present, with ordinary conduction

and a typical collapsing pulse, but over the aortic area itself and near the manubrium the murmur was continuous. There was no aneurysmal pulsation, the pulse and pupils were equal, and no tracheal tug was present. No signs of disease in the other viscera. At his own request the man again became an out-patient after being in nine days.

On November 18th he was readmitted with extreme dyspnœa and cyanosis. The swelling of face and neck had much increased, and had extended to the tongue, arms, and hands. The veins of the back were now enlarging in addition to those on the front of the chest and abdomen. Œdema of chest wall and distress of the patient prevented very accurate examination, but the murmurs were unchanged. There was no albumen in the urine. On November 28th he became delirious and violent; the eyes were now quite closed by œdema, and the legs œdematous as far as the knees. He occasionally obtained a little sleep whilst propped up in bed, but neither leeching nor hypnotics had any good effect. Respiration assumed the Cheyne-Stokes rhythm, and the ears and face were most intensely cyanosed. This condition persisted until death on December 15th.

*Post-mortem*.—The left ventricle was greatly hypertrophied, and the aortic valves thickened and incompetent. A large, saccular, intra-pericardial aneurysm projected from the right of the first part of the aortic arch, and communicated by a small circular orifice with the superior cava. The sac contained no clot, and the vein on the cardiac side of the aneurysm was completely occluded by close adhesion of its walls. There was no other evidence of vascular disease. The viscera were of cardiac type, and each pleural sac contained a pint or two of serum.

## 2. DISSECTING ANEURYSM OF AORTA; HÆMORRHAGE INTO PERICARDIUM; RENAL DISEASE.

W. G—, æt. 52, general porter, admitted December 17th, 1895; died January 22nd, 1896. Father and brother said to have died of phthisis. No history of alcoholism or of syphilis.

On admission he was complaining of headache, shortness of breath, and œdema of legs and eyelids. The area of cardiac dulness was not increased, and the impulse could not be localised. A systolic murmur was heard near the nipple and traced into the axilla. A systolic murmur was also present over the right base and conducted upwards, whilst the aortic second sound was loud and ringing. The pulse was regular, and the arteries were tortuous and extremely rigid. Breath-sounds were harsh, and numerous crepitations present at both lung bases. The urine, which was scanty, contained a large quantity of albumen and a few granular casts. The legs were very œdematous. No changes in fundi of eyes. Temperature subnormal.

Two attacks of epistaxis occurred whilst under observation, and the œdema spread considerably. On January 18th a sudden angina-like attack occurred, and the patient becoming somnolent was thought to be uræmic. Amyl nitrite was given and leeches applied to the mastoids. Remaining in the same condition until January 22nd, he died then somewhat suddenly.

*Post-mortem*.—The pericardial sac contained twelve ounces of fluid blood; there was also hæmorrhagic infiltration of the connective tissue surrounding the great vessels at the base of the heart, and extending around the branches of the pulmonary artery into the roots of the lungs. The aorta was dilated and extremely atheromatous, whilst about an inch above the aortic valves was a transverse slit traversing the inner and middle coats of the vessel. The middle coat was separated from the outer for a considerable distance, and the effusion into the pericardium had doubtless originated from this dissecting aneurysm, although the continuity could not be directly traced. The left ventricle of the heart was much hypertrophied, but both aortic and mitral valves seemed normal. The kidneys were large and smooth, with swollen cortices and considerable arterial thickening. No other visceral changes.

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### III. DISEASES OF THE DIGESTIVE SYSTEM.

#### STRICTURES OF SMALL INTESTINE; CHRONIC OBSTRUCTION OF BOWEL; LATERAL ANASTOMOSIS.

F. C—, æt. 27, teacher, admitted June 1st, discharged August 6th, 1896.

*Family history*.—A maternal aunt died of phthisis. The patient herself was subject to bronchitis, and when fifteen years of age had a transient attack of jaundice. She was admitted complaining of repeated attacks of abdominal pain accompanied by vomiting, distension, and diarrhœa. The first occurred about two years before admission, coming on quite suddenly with pain which was described as fearful, radiating from the abdomen to the back. Bilious matter was vomited, the abdomen swelled slightly, and after lasting for three days the pain passed off with an attack of diarrhœa. Attacks of a similar nature recurred at intervals, the last severe one being eight months before admission; during this attack it was noticed that the urine was much diminished in quantity until the pain subsided, and then a large quantity of clear pale water was voided, as much as two measured quarts being passed during one night. A similar fact was again noticed prior to admission, and whilst on all previous occasions the vomit appeared to have been of a bilious nature, the mother described it this time as brownish and offensive.

When she was admitted her abdomen was found flat and flaccid, and beyond tenderness in the right flank no abnormality was discovered. The urine was of fair specific gravity, and contained no albumen. The thoracic viscera were healthy.

Two days later the abdomen became distended, peristalsis was observed in the mid-abdominal region, accompanied by gurgling and pain. Next day the patient vomited. Notwithstanding the fact that enemata were given with fair results the abdominal condition remained unaltered, the pain being paroxysmal, and attended by nausea but very little sickness.

By June 19th the patient's condition was decidedly worse. She had vomited twice, the vomit being of a bilious nature; the pulse frequency was increasing, and there was evidence of fluid accumulation in the peritoneum. It was thought advisable, therefore, to arrange an exploration of abdomen; meantime opium was given, and as a result the pain was relieved but not removed, the vomiting ceased, and the pulse improved.

On June 22nd the abdomen was opened in the mid-line below the umbilicus; some yellowish serum and greatly distended small intestine immediately escaped. The distension was so great that multiple incisions of bowel were necessary for its relief. Two strictures of small intestine were then found, being situate about five inches apart. The bowel was short-circuited by a lateral anastomosis and the abdomen closed. Uninterrupted recovery ensued. The strictures were apparently simple, and their origin not ascertained.

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#### IV. DISEASES OF THE LIVER.

##### 1. INFLAMMATION OF VERMIFORM APPENDIX; RETRO-PERITONEAL ABSCESS; SUPPURATIVE PYLEPHLEBITIS.

W. A. H—, æt. 11, schoolboy, admitted November 9th, died November 11th, 1896. Father died of phthisis. Boy had no previous illness with the exception of measles and bronchitis. History of malaise, headache, and loss of appetite commencing nineteen days before admission. A week before admission his temperature was 102° F., and he complained of cough and abdominal pain, but the abdomen was not tender and the pain not localised; there were a few signs of bronchitis. On November 6th the abdomen was somewhat distended, tongue red and dry, bowels relaxed, pulse rapid and feeble, and temperature 103° F.; the patient was slowly lapsing into a typhoid condition. The next day it was thought that there was some tenderness in the right iliac fossa; decubitus was dorsal, the recti rigid, and the scrotum and ankles slightly œdematous. Diarrhœa continued; the temperature, which had now risen to 105·2° F., was reduced by sponging, and the day before admission fell to 101° F., only to rapidly rise again to 104° F. The pulse was still rapid, ranging between 99 and 160, and the respirations were rather more than proportionately increased. During the illness there had been no vomiting save once, when an emetic caused the ejection of some blood-stained mucus.

The state on admission was very similar to the condition described above. The abdomen was distended and tense, the liver dulness still present and apparently of normal extent. The pulse was 140, and a short systolic murmur present at the heart's impulse; area of cardiac dulness normal. Respirations 60, but no indications of pneumonia. The urine contained no albumen. The temperature, which was 104° F. on admission, fell to 99° F. after a bath, and then slowly rose to 103·8° F. The diarrhœa persisted, and there was lumbar œdema in addition to the œdema mentioned above. There was no positive



evidence of enteric fever, as which the case had been admitted. Death occurred early in the morning of the day following admission.

*Post-mortem.*—There was a retro-peritoneal abscess behind the cæcum. The pus was fœtid, and the patent stump of the vermiform appendix lay in the wall of the abscess cavity. The general peritoneum was not inflamed. The liver was much enlarged, extending two inches below the costal margin. It was riddled with large abscesses varying from one to three inches in diameter. These abscesses were all smooth-walled, and situate at the terminations of the portal vein. They contained light yellow pus. The portal vein contained similar pus, and at its entrance into the liver there was a mass of firmly adherent decolourised clot; its various tributaries were themselves unblocked. The other organs showed no change.

## 2. CIRRHOSIS OF LIVER; SUPPURATIVE NEPHRITIS; URÆMIA WITH UNUSUAL MANIFESTATIONS.

A. J. N—, æt. 13, for a short time a printer, admitted first June 29th, 1892; died November 27th, 1896.

Father rheumatic. Mother died at age of thirty-four in confinement. No history of phthisis. Patient the only child now living. After his birth followed four miscarriages, each at the fifth month.

*Previous history.*—Apparently quite healthy in infancy; measles and bronchitis when four years of age, otherwise health good until present illness. No history of alcohol.

Six weeks before admission he had an attack of sore throat and shivering, which was followed by the passage of claret-coloured urine without increased frequency of micturition. Shortly afterwards the abdomen began to swell, and a week before he came in hospital  $9\frac{1}{2}$  pints of serum were removed by tapping. The legs did not swell, but a small petechial rash was noticed on them.

On examination the abdomen was distended and contained free fluid; the veins on its anterior wall were enlarged, the liver could be felt a finger's breadth below the costal margin, and the spleen was also increased in size. The percussion note at the lung bases was impaired, but there were no other signs of intra-thoracic disease. The urine contained much blood, a quarter albumen, and a very few epithelial and blood casts. A petechial rash was present on the legs around the hair-follicles. There were no changes in the corneæ or fundi of the eyes, and no signs of congenital syphilis. The temperature was  $103.2^{\circ}$  F. on admission, the patient shivering, but fell to normal the next day, and did not again become febrile. A subsequent examination of the blood showed no abnormality. On July 10th  $7\frac{1}{2}$  pints of serum were removed from the abdomen; the liver was then felt projecting just below the ensiform cartilage; it was very hard, and its surface irregular; a distended gall-bladder could occasionally be felt. The spleen projected a hand's breadth below the costal margin, and abdominal pain, chiefly on the left side, was complained of. The urine still contained blood, albumen, and a very few casts; during the first week of observation the average daily quantity was 21 ounces. By August 21st the

blood and albumen had disappeared, and the average quantity passed daily was 32 ounces. The boy was discharged on September 14th in fair general health.

He was again under observation in hospital in April, 1896, complaining then of abdominal discomfort and shortness of breath. The liver had not altered in size, but the spleen now reached as low as the umbilicus. The boy was very anæmic, and hæmic murmurs were present at the base of the heart and in the neck. The blood showed no disproportion of red and white cells; the gums were spongy and inclined to bleed; the urine constantly contained a trace of albumen; the temperature was normal. He was treated with iodide of potassium.

Readmitted in September, his general symptoms were as before, but in addition his movements were very tremulous, and slight nystagmus was thought to be present. No albumen was found in the urine this time. He was discharged on September 30th, and attended as an out-patient until October 23rd, when he was readmitted. His condition was as follows:—Expression vacuous, very emotional at times; saliva dribbled from the mouth; gums spongy and bleeding; fauces congested and clogged with sticky mucus. Intention tremors were well marked, it being almost impossible for him to button his clothes or execute other co-ordinate movements; he could not even sit up in bed. The head and neck showed the tremors, the voice was reduced to a whisper, and his speech tremulous and indistinct. There was no actual loss of power in the extremities, no wasting, and no anæsthesia. The knee-jerks were much increased, the legs readily became rigid, and doubtful ankle-clonus was noted. Distinct nystagmus accompanied the outward movements of the eyes; the pupils were somewhat eccentric, but reacted to light and in accommodation; the fundi showed deep, pale, physiological cups, but no pathological change. No abnormal signs were present in the lungs; expectoration consisted of viscid saliva mixed with blood from the gums and fauces. The heart's action was regular and feeble. In the abdomen the liver could not be felt, but the spleen extended still to the umbilicus. The urine contained albumen almost constantly in small quantity, and occasionally some blood-cells and triple phosphate crystals.

On November 22nd the temperature, which had hitherto been rarely higher than 99° F., suddenly rose to 104° F., and at the same time the pulse-rate quickened, and the patient became stuporous. This condition continued until death on November 27th.

*Post-mortem.*—The liver was in a condition of advanced cirrhosis, its surface injected and uniformly tuberculated, and its section presenting the usual network of translucent connective tissue embracing islets of bile-stained liver substance. The spleen was large and adherent, it weighed 34 ounces, and apart from its size its appearance differed but little from normal. Both kidneys were enlarged and injected; the left presented numerous radiating suppurative striæ extending into the cortex, whilst in the right the suppuration was limited to a few foci; the ureters and pelves were healthy, as also was the urinary bladder. A thin layer of necrosis covered the pharyngeal wall, and the larynx was deeply injected, its tissues swollen, and the cords a little ragged. The lungs were œdematous and hæmorrhagic, and the right pleura inflamed. The brain was soft and hyperæmic, but no evidence of disease was found on naked-eye and microscopical examination; the cord also appeared healthy. The peritoneum

was dry, but there was no very obvious development of anastomotic venous channels.

### 3. UNILOBULAR CIRRHOSIS OF LIVER IN AN INFANT; MEASLES.

E. B—, female æt. 2 months, admitted December 10th, 1895; died March 18th, 1896.

The father was said to be healthy, the mother subject to indigestion, but otherwise well. There were four other children in the family, all in good health. No evidence of syphilis was forthcoming.

The child was first under observation for four days in October, 1895, being admitted as a possible case of intussusception: there was a history of the passage of blood and mucus from the bowel, but no abnormality was discovered on physical examination, and although there was slight diarrhœa no more blood was passed.

It was stated later that ever since birth the child had a yellowish appearance, although there is no note of jaundice in the "state" written on her first admission. After discharge the yellow tint became gradually more decided and the stools quite white.

When readmitted in December the child was deeply jaundiced, the skin, conjunctival and mucous membranes all being of a deep olive-yellow colour. There was no evidence of any cutaneous irritation. The abdomen was tense and prominent, the liver dulness commenced at the sixth rib in front, whilst the liver edge could be felt two inches below the costal margin. The spleen was not enlarged, and there was no ascites. The umbilicus was normal. The bowels were not relaxed, but the stools were of a light stone-colour, apparently containing no bile pigment. The thoracic viscera were normal. Pulse 120, regular; temperature varying between 97° and 100° F. Urine not examined.

Treatment comprised grey powder followed by potassium iodide, and during the first three months the child gained slightly in weight, but the physical signs remained unaltered.

On March 14th a small quantity of mucus and blood was again passed by the bowel, the temperature at the same time rising to 102·2° with catarrhal symptoms. On March 17th the eruption of measles was present, and the child died next day.

*Post-mortem*.—The liver was firm and tough, its surface being wrinkled; it weighed 6½ ounces. The gall-bladder was collapsed, and contained a little colourless glairy fluid: the cystic and common ducts were normal so far as could be traced, but the lower part of the common duct and its entrance into the duodenum were unfortunately destroyed during removal. The other viscera presented no unusual appearances.

Microscopically the liver showed extensive cirrhosis. The individual lobules were surrounded by fibrous tissue containing multitudes of actively growing fibroblasts, and enclosing here and there groups of disintegrating bile-stained liver cells; fresh groups of cells, too, were being cut off from the periphery of the lobules by the actively growing fibrous tissue. The fibrous zones were moderately vascular, the vessels present being perfectly healthy in appearance; the zones contained also numerous groups of cubical cells in parallel columns suggesting bile-ducts, and in some instances actually including bile pigment in

the lumen. Wandering cells containing bile pigment were also seen. The liver lobules were much reduced in size, and the cells packed with greenish pigment granules, and many of the cells disintegrating.

#### 4. ACUTE ATROPHY OF LIVER.

S. B—, æt. 24, female, admitted November 23rd, died December 3rd, 1896.

Her father and mother were both alcoholic, she herself was of loose habits and drank to excess. No history of syphilis could be obtained, and her only previous illness was bronchitis. The present illness commenced six weeks before admission with gradual onset of jaundice, slight pain after food, and a tendency to vomit. The urine became dark coloured and the stools almost white.

When examined she was decidedly jaundiced, the liver extended two inches below the costal margin, whilst the area of percussion dulness commenced at the lower border of the sixth rib. The spleen could just be felt. There were no other signs of visceral disease. Both pulse and temperature were normal. The urine gave the ordinary reactions for bile pigment.

The bowels remained obstinately constipated, and vomiting occurred two or three times every day, but no material change supervened until five days after admission, when the patient became incoherent and restless. The temperature was now subnormal and the pulse slow, whilst thirst and pain in the chest were complained of. On the next day the patient was comatose, breathing stertorously with Cheyne-Stokes rhythm, the jaundice was intense, the face flushed and the skin moist, whilst the temperature had risen to 102·4° F. Urine was voided unconsciously, and vomiting had ceased. The liver dulness, although still commencing at the sixth rib, only extended to within a finger's breadth of the costal margin, and was not absolute; the liver itself could not be felt. The urine was deeply bile-stained, contained a small quantity of albumen, and yielded on evaporation balls of leucin, but no tyrosin. The coma deepened, several convulsive attacks occurred, and just before death the temperature rose to 105° F. and the pulse to 200 per minute.

*Post-mortem*.—The liver was considerably reduced in size, weighing only 34 ounces. The capsule was not wrinkled, but the organ was very flabby, and showed the usual red and yellow surface marking of acute atrophy. There was no obstruction to the bile passages outside the liver. The kidneys were large and injected, the spleen of normal size and consistence. No lesions observed in other viscera.

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### V. DISEASES OF THE GENITO-URINARY SYSTEM.

#### RENAL TUMOURS IN AN INFANT.

G. P. P—, male æt. 11 months, admitted December 15th, died December 26th, 1896.

Family history unimportant. Six weeks before admission the abdomen was noticed to be somewhat swollen and hard; at the same time the bowels were con-



stipated, and there appeared to be pain on defecation. It was stated that the child had been passing a very large quantity of urine. The abdominal swelling gradually increased, and finally a distinct lump was felt in the right side by the mother.

On admission the child was emaciated and miserable. The abdomen was much distended, the skin being smooth and shining and traversed by many dilated veins. Each loin was completely filled by a large nodular elastic tumour, evidently corresponding to the kidney. The right tumour was rather the larger, and extended as low as the iliac crest. The urine contained a trace of albumen, but the quantity of water passed could not be measured. There appeared to be no other visceral lesion. The child died of exhaustion in eleven days.

*Post-mortem.*—The kidneys formed two large tumours practically filling the abdomen; the right weighed  $35\frac{1}{2}$  ounces, the left  $11\frac{1}{2}$  ounces. In each tumour the kidney substance was replaced by an encapsuled mass of whitish glistening growth. All the other viscera were normal.

Microscopically the growth was a very vascular round-celled sarcoma, with a few intermixed fasciculi of striated muscle-fibres and large areas of necrosis. The right kidney was entirely replaced by the growth, but the left was still represented by a small area of apparently normal renal tissue perched upon the upper part of the tumour.

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## VI. DISEASES OF THE NERVOUS SYSTEM.

### 1. TUMOURS OF BRAIN AND SPINAL CORD.

L. Q—, female æt. 26, married, admitted March 12th, died March 30th, 1896.

Family history unimportant. Previous health always good. No children. No miscarriage. Her illness commenced seven months before admission with pain radiating down the left arm, gradually followed by loss of power. Weakness of the left leg succeeded four months later, and about this time some weakness of the right arm was noticed by the patient. On examination the left arm hung limp, cold, and helpless, with the fingers slightly flexed at their two terminal joints, and there was a tendency to drag the left foot in walking. Voluntary power in the arm was confined to slight movements of the thumb. Below the left elbow anæsthesia was complete save for a short distance along the radial border of the forearm, over the ball and rest of the thumb, and the palmar surface of the finger tips; but even over these areas sensation was impaired, inasmuch as heat was not recognised as such, but as cold. The left arm was generally wasted, its circumference being everywhere half an inch less than the right. The right arm apparently showed no weakness. The left leg was weak and slightly rigid, but not wasted; the knee-jerk and plantar reflex on this side were exaggerated, and both ankle and patellar clonus easily obtained. The neck was somewhat rigid, and the cervical spine tender to the touch; the head was held stiffly, with the chin pointing a little upwards and to the left: lateral rotation beyond very

narrow limits caused pain. The pupil reactions were normal, but the left pupil was continuously smaller than the right. There was no note as to the condition of the optic discs. No evidence of disease in thorax or abdomen. Electrical examination of the muscles of the left arm failed to show any degenerative reaction. A provisional diagnosis of spinal caries was made, and the head fixed with sand-bags. The patient became very restless, complaining of pain in the head and left arm; the right arm now showed definite weakness, and it was thought that there was deficient movement of the right side of the mouth. The left external rectus became paralysed, and finally difficulty in deglutition and pain in the cardiac region with twitching of the left arm supervened. Death occurred somewhat suddenly on March 30th. The temperature was normal throughout, as also was the pulse-rate.

*Post-mortem*.—The lateral ventricles of the brain contained a number of small gelatinous growths, arising apparently from the ependyma; the most conspicuous growth sprang from the septum lucidum, and projected laterally into each ventricle. A similar growth arose from the roof of the fourth ventricle, and projected inwards into that cavity.

The whole of the lower cervical cord was softened and uniformly infiltrated by a pinkish gelatinous growth, the exact limits and extent of which could not be definitely ascertained owing to damage during removal. The vertebræ were not diseased, and all the other viscera were healthy.

## 2. CYST OF RIGHT FRONTAL LOBE.

G. S—, æt. 31, coachman, admitted October 1st, died December 23rd, 1896.

Family history unimportant. No history of alcoholism or syphilis, only illness said to be "blood-poisoning," the result of a kick on the shin, and terminating in formation of abscesses on the legs. As the result of a fall from a horse three years before admission he was rendered insensible, and had been subject to severe headaches ever since. On February 3rd, 1896, after feeling dizzy and tired all day, he was driving to his employer's house, when, instead of stopping at the door, he turned twice in the drive, passing and repassing the house. He afterwards denied any memory of the occurrence, but the same evening had a fit; after which he lay unconscious, with a short intermission, for thirty-six hours, and during this period had repeated convulsive movements of the left arm and left side of the face. He made a good recovery, but was again thrown from a horse on to his head at the end of July, and after this the headaches recurred, and during the three weeks prior to admission were accompanied by vomiting, which occurred independently of food. When examined the only objective symptoms of disease were early double optic neuritis, with slight left ptosis, and a tender spot in the left temporal region from which the headache was said to radiate. Although no squint was detected, the patient stated that distant objects appeared double, so that he acquired the habit of looking at things with his right eye only. There were numerous depressed pigmented scars upon the legs. On account of persistent headache and vomiting uncontrolled by drugs, the skull was trephined in the left temporal region anteriorly over the tender spot above mentioned. The

dura was incised and the frontal lobe explored with negative result. The symptoms were only temporarily alleviated; in the course of a week the vomiting and headache returned, the patient became restless, and his mental faculties rapidly deteriorated; the sphincters were uncontrolled; he was continually yawning, filthy in his habits, and always restlessly moving his legs.

A hernia cerebri formed and was shaved off; the temperature, which had hitherto been normal, began to rise, and the pulse-rate increased to 120, whereas it had formerly varied between 52 and 72. Death occurred fifty-eight days after operation.

*Post-mortem*.—The dura was firmly adherent to the right frontal lobe, and this lobe below the level of the corpus callosum was occupied by a large smooth-walled cavity containing clear fluid. The wall of the cyst had in places the appearance of an infiltrating new growth. On the left side the dura was adherent to the margin of the trephine hole, whilst the subjacent brain substance was softened and semi-purulent. The skull-cap was much thickened, the inner table being rough and porous. The other organs were healthy. Microscopic sections of the cyst wall showed a vascular infiltrating glioma, with hæmorrhages.

### 3. CYSTIC NEW GROWTH OF CEREBELLUM.

M. J. B—, æt. 38, female, married, admitted November 12th, died December 3rd, 1896.

Phthisis in maternal uncle; family history otherwise excellent. Never any serious illness. Married four years; two children living and well; one, the last, said to have died from eczema when three months old; no miscarriages.

For six weeks had been subject to constant gnawing pain in the back of the head and neck, and had lately vomited several times daily and been subject to attacks of giddiness. The left upper eyelid had gradually drooped.

On admission she was drowsy, apathetic, and emaciated. There was decided left-sided ptosis, and the left eye was only moved into the outer canthus with difficulty; the left pupil was smaller than the right, and marked double optic neuritis was present. It was thought that the grasp of the left hand was unduly weak, but this could not be definitely proved. The knee-jerks were present and equal; there was no anæsthesia. The bowels were constipated, the tongue was coated, the temperature normal. The urine contained no albumen. Circulatory and respiratory systems normal.

The patient remained in the same drowsy condition, complaining of her head, vomiting occasionally, and rapidly emaciating. At times she had a slight convergent squint, which was transitory, and a few days before death the knee-jerks could not be obtained.

*Post-mortem*.—The posterior half of the *right* cerebellar hemisphere was occupied by a cyst with yellowish mucoid contents. The grey substance over the cyst was thinned and softened, whilst the dentate nucleus had disappeared. A reddish vascular growth, half an inch in diameter, projected into the cyst at one point, but elsewhere the walls were smooth. The crus was not involved, and the cervical sympathetic showed no lesion. The whole ventricular system

of the brain was moderately dilated. Both lungs and kidneys were intensely congested; other viscera healthy. Microscopically the growth proved to be a very vascular glioma undergoing myxomatous change.

#### 4. HYSTERO-EPILEPSY.

F. E. R—, female æt. 16, single, admitted June 11th, discharged October 12th, 1896.

Father and one brother said to be consumptive; another brother died, aged 11 weeks, in convulsions. Sister subject to pleurisy.

The patient had measles and bronchitis when three years of age, and whooping-cough four years later. During recovery from the last disease she had her first fit, which was said to be followed by stupor and delirium of some weeks' duration; a diagnosis of "brain fever" was then made. After recovery from this a series of short convulsive seizures occurred, followed by drowsiness and loss of memory of what happened during the fits. Similar seizures recurred at irregular intervals during the next five years, transient blindness occasionally occurring as a warning. During the fits her mouth was invariably drawn to the left, and she sometimes bit her tongue. Catamenia commenced at the age of 12½ years, and since that she has been subject to nocturnal fits as well; latterly she had occasionally lapsed into an insensible condition in the daytime without any convulsive movements.

Six months before admission she apparently had a fall when getting out of bed, striking the back of her head, and after that refused food, complaining of nausea and headache, which was of a shooting character and chiefly vertical. She did not vomit.

The convulsive seizures entered on a new phase a fortnight before she came under observation, the movements consisting of rapid and prolonged lateral rotation of the head and malleation with the arms, followed by catalepsy.

She came under observation whilst in the convulsive stage. The head and neck were rapidly turned from side to side on the pillow, the movement accompanied by a monotonous moaning. The hands were clenched, and the arms, particularly the left, continually striking the bed with a jerky movement or rotating windmill fashion. The eyes were widely open and the corneæ insensitive. The convulsive movements were succeeded by a condition of partial catalepsy, with the eyeballs rotated upwards.

Physical examination showed no visceral lesion. No anæsthesia was detected in the intervals between the fits, but there was decided ovarian and mammary hyperæsthesia. The visual fields were much contracted; the only defect in colour vision was a slight confusion with green, but not with red; the optic discs were quite normal.

For the first month the fits commenced fairly constantly about noon, and the succession of convulsions and partial catalepsy continued until six in the evening, after which the patient slept quietly. At first the fumes of ammonia would cause her to return to consciousness, but later all stimuli failed; electricity, iced baths, apomorphine, and snuff all being tried in turn, the only noticeable result



being that occasionally she passed abruptly from the convulsive to the cataleptic stage.

After the first month the duration of the fits gradually increased, so that they occupied twelve hours or more; the legs, too, now shared the movements, the thighs being alternately rotated inwards. The rapidity of the arm movements varied from 98 to 116 per minute; the cataleptic intervals were shorter and the convulsive stages were prolonged, whilst the patient was evidently getting weaker. Temperature remained normal. It was noticed that the effect of observation was to decidedly increase the convulsive movements. Only once did there appear to be incontinence of urine.

On August 1st a single rigor occurred, the temperature running up to 102° F., and shivering lasting for a quarter of an hour. The next day the fits were not so prolonged, and in an interval of consciousness the patient complained of headache and stiffness of the right arm. Two days later for the first time the fit was stopped by the use of the interrupted current applied continuously for eighty minutes. From this time the fits became amenable to treatment, and the patient was allowed up for a short time, but still strictly isolated from her friends and the other patients.

On August 9th the temperature suddenly rose to 103° F., and remained about this point for two days; at the same time small bedsores threatened over the trochanters and heels, and some small blisters appeared on the fingers. The patient became very drowsy and apathetic; the pupils were somewhat contracted. The urine contained one fifth albumen, but no casts. It was necessary to resort to nasal feeding, and the bromide of potassium which the patient had been taking in large doses was first reduced to 30 grains per diem, and then ether and ammonia substituted. Isolation was discontinued. The temperature gradually fell, the albumen diminished, and the small sores on the heel and finger began to cicatrise. By August 21st the temperature was again normal and the albuminuria had ceased. The fits did not recur.

At the end of August another period of drowsiness and depression with refusal of food occurred. The temperature occasionally rose to 100° F., and a few crepitations were heard at the lung bases. Nasal feeding was resumed, and the condition soon improved. The patient was finally sent to a convalescent home, where she completed her recovery.



# SURGICAL REPORT.

1896.

BY CUTHBERT S. WALLACE, M.B., B.S.LOND., F.R.C.S.ENG.

## *General Surgical Statement.*

Number of surgical beds—256 (this includes all beds in children's ward).

,, of surgical patients in hospital, January 1st, 1896				{	Males 128
				{	Females 84
,, ,, ,, ,, December 31st, 1896				{	Males 140
				{	Females 104
,, ,, ,, treated to a termination in 1896 . . .					3447

	Total.		Males.		Females.
Discharged cured . . . . .	2388	...	1526	...	862
,, relieved . . . . .	582	...	303	...	279
,, unrelieved . . . . .	232	...	120	...	112
Died . . . . .	245	...	138	...	107
Totals . . . . .	3447		2087		1360

Average number of days in hospital—22·62.

Death rate=7·11 per cent.

(Ophthalmic cases are not included in the above statement.)

Beatrice Ward (female surgical) was opened in early part of this year.  
Magdalen Ward has been closed throughout this year.

TABLE I.—*Abstract, showing Diseases, &c., in Classes,*

DISEASE.	Sex.		Age.								Duration before admission.								Chronic.	Not stated.
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12				
GENERAL DISEASES.																				
Erysipelas . . .	57	51	7	7	10	21	26	15	15	7	58	18	2	...	...	...	...	30		
Pyæmia . . .	...	3	3	...	...	...	...	...	...	...	1	1	1	...	...	...	...	...		
Tetanus . . .	3	1	...	...	1	1	1	...	1	...	1	3	...	...	...	...	...	...		
Anthrax infection .	1	1	...	...	1	1	...	...	...	...	1	1	...	...	...	...	...	...		
Septicæmia . . .	1	1	...	...	...	1	1	...	...	...	1	1	...	...	...	...	...	...		
Syphilis, congenital	1	1	1	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...		
„ secondary .	1	8	...	...	3	5	1	...	...	...	2	1	4	1	1	...	...	...		
„ tertiary .	7	6	...	...	1	3	7	...	1	1	...	...	2	1	3	2	5	...		
LOCAL DISEASES.																				
Carcinoma—																				
Spheroidal—																				
Breast . . .	...	53	...	...	...	...	6	14	21	12	...	1	1	4	10	13	24	...		
„ recurrent in scar	...	5	...	...	...	...	2	...	2	1	...	...	...	...	...	3	2	...		
„ „ in glands	...	3	...	...	...	...	...	1	...	2	...	...	...	1	...	1	1	...		
Antrum . . .	...	2	...	...	...	...	...	2	...	...	...	...	...	...	1	1	...	...		
Lachrymal gland .	2	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2	...		
Parotid . . .	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...		
Thyroid . . .	...	1	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...		
Kidney . . .	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...		
Testis . . .	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...		
Abdomen . . .	...	2	...	...	...	...	...	2	...	...	...	...	...	...	...	1	1	...		
Columnar—																				
Breast . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...		
Stomach . . .	...	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...		
Pylorus . . .	...	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...		
Cæcum . . .	2	...	...	...	...	...	2	...	...	...	...	...	...	...	2	...	...	...		
Ascending colon .	3	...	...	...	...	2	...	1	...	...	...	...	...	...	1	1	1	...		
Sigmoid flexure .	1	1	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	1		
Rectum . . .	10	15	...	...	...	2	4	4	8	7	...	...	2	1	14	5	2	1		
„ carcinomatous gland	...	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...		
Umbilicus . . .	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...		
Abdomen . . .	...	5	...	...	...	...	2	1	...	2	...	...	...	1	3	...	1	...		
Squamous—																				
Cheek . . .	1	3	...	...	...	...	...	...	...	4	...	...	...	...	1	2	...	1		
Lip . . .	9	...	...	...	...	...	...	...	5	4	...	...	...	2	5	1	1	...		



according to *Authorised Nomenclature.*

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts 1-2	Mts 2-4	Mts 4-6	Mts 6-9	Mts 9-12	Mts. +12		C.	R.	U.	D.	
11	65	26	4	2	...	...	...	...	95	...	...	13		One case died while being taken home by friends against advice.
3	...	...	...	...	...	...	...	...	...	...	...	3		
2	...	...	2	...	...	...	...	...	2	...	...	2		
...	1	1	...	...	...	...	...	...	2	...	...	...		
...	1	...	1	...	...	...	...	...	1	...	...	1		<i>Vide</i> 'British Medical Journal,' "Hæmorrhagic Septicæmia," 1896, and Special Table III.
...	1	1	...	...	...	...	...	...	1	...	...	1		
1	2	1	2	1	2	...	...	...	5	3	1	...		
...	3	8	2	...	...	...	...	...	5	7	1	...		
4	7	29	13	...	...	...	...	...	67	...	13	3		Adenoma of thyroid 1; Paget's disease of nipple 1; chronic interstitial mastitis with cyst 1; glycosuria 1.
...	1	2	2	...	...	...	...	...	5	...	...	...		
...	...	3	...	...	...	...	...	...	3	...	...	...		Supra-clavicular 2.
1	...	...	1	...	...	...	...	...	1	1	...	...		Same case, recurred. Excision of upper jaw.
...	1	...	1	...	...	...	...	...	1	1	...	...		Same case, recurred.
...	...	1	...	...	...	...	...	...	...	...	1	...		
...	...	1	...	...	...	...	...	...	...	...	1	...		
...	...	1	...	...	...	...	...	...	...	...	1	...		
...	...	1	...	...	...	...	...	...	...	1	...	...		Lumbar glands involved. Castration.
1	...	...	1	...	...	...	...	...	...	...	2	...		Same case; origin not determined.
...	...	1	...	...	...	...	...	...	1	...	...	...		
1	...	...	...	...	...	...	...	...	...	1	...	...		Transferred to Medical side.
1	...	...	...	...	...	...	...	...	...	1	...	...		Transferred to Medical side.
...	...	1	...	...	...	1	...	...	1	1	...	...		Same case.
...	...	...	2	1	...	...	...	...	2	...	...	1		
2	...	...	...	...	...	...	...	...	...	...	...	2		Obstruction 2.
1	4	8	9	3	...	...	...	...	5	8	8	4		Uterus involved 1; intussusception 1.
...	...	1	...	...	...	...	...	...	1	...	...	...		Previous excision of rectum.
...	...	...	1	...	...	...	...	...	1	...	...	...		Excised.
...	4	...	1	...	...	...	...	...	...	4	1	...		Undetermined in all.
...	3	...	1	...	...	...	...	...	3	1	...	...		Internal surface 1, external surface 3; scar epithelioma 1.
...	5	4	...	...	...	...	...	...	9	...	...	...		Lower in all. Excision in all.

TABLE I.—Abstract, showing Diseases, &amp;c., in Classes,

DISEASE.	Sex.		Age.									Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60		Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic.	Not stated.
LOCAL DISEASES — continued.																			
Carcinoma—continued.																			
Squamous—																			
Tongue . . . . .	21	1	...	...	...	...	...	3	9	10	...	...	...	3	4	7	4	4	...
„ recurrent	2	...	...	...	...	...	...	...	...	2	...	...	...	...	1	1	...	...	...
Glands of neck . . .	12	...	...	...	...	...	...	4	4	4	...	...	...	3	3	4	1	...	1
Palate . . . . .	3	...	...	...	...	...	...	...	1	2	...	...	...	...	...	2	...	1	...
Tonsil . . . . .	1	1	...	...	...	...	...	1	...	1	...	...	...	...	...	1	...	1	...
Alveolar border . .	3	...	...	...	...	...	...	1	...	2	...	...	...	...	3	...	...	...	...
Œsophagus . . . . .	6	...	...	...	...	...	...	2	3	1	...	...	...	...	1	3	1	1	...
Larynx . . . . .	1	1	...	...	...	...	...	1	...	1	...	...	...	...	1	...	...	1	...
Penis . . . . .	4	...	...	...	...	...	...	1	2	1	...	...	...	1	2	...	...	1	...
„ recurrent	2	...	...	...	...	...	...	...	2	...	...	...	...	...	1	...	1	...	...
Vagina . . . . .	...	2	...	...	...	...	...	1	1	...	...	...	...	...	1	...	1	...	...
Hand . . . . .	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
Leg . . . . .	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Foot . . . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
Rodent ulcer . . . .	2	5	...	...	...	1	2	3	...	1	...	...	...	...	...	...	1	6	...
„ recurrent	1	1	...	...	...	...	...	...	1	1	...	...	...	...	...	1	...	1	...
Sarcoma—																			
Lip . . . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
Tonsil . . . . .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...
Orbit . . . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Neck . . . . .	2	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	1	...	...
Septum nasi . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
Testis . . . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...
Thigh . . . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...
Popliteal space, recurrent	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Sole of foot . . . .	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...
Humerus . . . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Metacarpal, of thumb	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
Ilium . . . . .	1	3	...	...	...	1	...	1	2	...	...	...	...	...	1	2	1	...	...
Femur . . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...
Tibia . . . . .	4	1	...	...	2	3	...	...	...	...	...	...	...	...	2	2	1	...	...
Melanotic, of cheek	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...
„ of back, recurrent	1	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...

according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12		C.	R.	U.	D.	
...	5	12	5	...	...	...	...	...	14	...	5	3		Gangrene of lung, fatal, 1.
...	2	...	...	...	...	...	...	...	...	...	1	1		Floor of mouth involved 1.
1	6	5	...	...	...	...	...	...	5	1	4	2		Secondary growth in heart 1; ligature of common carotid 1; duodenal ulcer 1.
1	...	1	1	...	...	...	...	...	1	...	2	...		Fauces involved 1.
1	1	...	...	...	...	...	...	...	...	...	2	...		
...	1	1	1	...	...	...	...	...	1	...	2	...		Jaw involved 1.
...	...	4	2	...	...	...	...	...	2	2	2	2		Readmission 1.
...	...	...	2	...	...	...	...	...	2	2	...	...		Tracheotomy 2.
1	1	2	...	...	...	...	...	...	2	1	1	...		
...	1	...	...	1	...	...	...	...	2	...	...	...		
1	1	...	...	...	...	...	...	...	...	2	...	...		
...	...	...	1	...	...	...	...	...	1	...	...	...		Excised.
...	...	...	1	...	...	...	...	...	1	...	...	...		Previous ulcer; epithelioma in scar tissue.
...	...	...	...	1	...	...	...	...	1	...	...	...		Previous ulcer from frostbite. Symes' amputation.
1	...	5	1	...	...	...	...	...	6	...	1	...		
...	1	...	1	...	...	...	...	...	2	...	...	...		
...	...	1	...	...	...	...	...	...	1	...	...	...		Secondary growths in skin.
...	1	...	...	...	...	...	...	...	...	1	...	...		Undetermined.
...	...	...	1	...	...	...	...	...	...	1	...	...		Traumatic round-celled.
2	...	...	...	...	...	...	...	...	...	2	...	...		Lympho-sarcoma 1; undetermined 1.
...	...	1	...	...	...	...	...	...	1	...	...	...		Small round-celled.
...	...	1	...	...	...	...	...	...	1	...	...	...		Large round- and spindle-celled.
...	...	...	1	...	...	...	...	...	1	...	...	...		Cystic round-celled. Amputation at hip.
...	...	...	...	1	...	...	...	...	1	...	...	...		Fibro-sarcoma.
...	...	1	...	...	...	...	...	...	...	1	...	...		Pigmented alveolar. Refused amputation.
...	...	...	1	...	...	...	...	...	...	1	...	...		Undetermined. Refused amputation.
...	...	1	...	...	...	...	...	...	1	...	...	...		Chondrosarcoma; multiple exostosis and enchondroma. Amputation of thumb and metacarpal.
...	...	3	1	...	...	...	...	...	...	4	...	...		Chondro-myxo-sarcoma 2; undetermined 2. Readmission 1. Chondrosarcoma incised and scraped.
...	...	...	1	...	...	...	...	...	1	...	...	...		Small spindle-celled. Amputation of thigh.
...	2	1	1	1	...	...	...	...	1	1	2	1		Nævoid sarcoma 3; myeloid 1; spindle-celled 1. Readmission 2.
...	1	...	...	...	...	...	...	...	1	...	...	...		Excised.
1	...	...	...	...	...	...	...	...	...	1	...	...		

TABLE I.—Abstract, showing Diseases, &amp;c., in Classes,

DISEASE.	Sex.		Age.								Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys 1-4	Dys- 5-13	Wks 2-4	Mts. 1-2	Mts 2-6	Mts. 6-12	Chronic	Not stated.
<b>LOCAL DISEASES — con- tinued.</b>																		
<i>Simple tumours—</i>																		
Lipoma . . . . .	7	11	...	...	3	4	3	3	4	1	...	...	...	1	1	1	13	2
Papilloma . . . . .	2	2	...	...	1	...	...	...	...	3	...	...	...	...	1	...	3	...
Polypi . . . . .	6	14	1	4	4	4	6	...	1	...	...	...	2	2	...	4	11	1
Adenoids . . . . .	7	13	...	3	13	4	...	...	...	...	...	...	1	3	...	...	10	6
Tonsils . . . . .	...	2	...	...	1	1	...	...	...	...	...	...	...	...	...	...	1	1
Enchondroma . . . . .	2	...	...	...	1	1	...	...	...	...	...	...	...	...	...	1	1	...
Exostosis . . . . .	3	5	...	1	5	2	...	...	...	...	...	...	...	...	...	1	6	1
Nævus . . . . .	...	12	9	...	1	2	...	...	...	...	...	...	...	...	2	...	10	...
Fibroma . . . . .	4	7	...	...	3	2	4	1	...	1	...	...	...	1	1	3	6	...
Fibro-adenoma . . . . .	...	10	...	...	2	3	3	2	...	...	...	...	...	1	4	...	3	2
Myxoma of vocal cord . . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
Myxo-adenoma . . . . .	...	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
Adenoma . . . . .	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
Fibro-myxoma . . . . .	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...
Plexiform neuroma . . . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Fibro-myoma . . . . .	...	5	...	...	...	...	1	4	...	...	...	...	...	...	...	...	5	...
Parotid tumour . . . . .	1	2	...	...	...	1	1	1	...	...	...	...	...	...	...	...	3	...
Submaxillary tumour . . . . .	...	2	...	...	1	1	...	...	...	...	...	...	...	...	...	...	2	...
Granuloma . . . . .	...	3	...	...	...	3	...	...	...	...	...	...	...	1	...	...	2	...
Pigmented mole . . . . .	1	3	...	1	2	...	...	...	...	1	...	...	...	...	1	...	3	...
Sacro-coceygeal tumour . . . . .	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
<i>Cysts—</i>																		
Dermoid . . . . .	8	3	1	...	2	5	1	2	...	...	...	...	1	...	...	...	10	...
Serous, of back . . . . .	1	1	1	...	...	1	...	...	...	...	...	...	...	1	...	...	1	...
Thyro-lingual . . . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Multilocular, of neck . . . . .	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...
Appendicular . . . . .	1	1	...	...	1	...	...	1	...	...	...	...	...	...	1	...	1	...
Breast . . . . .	...	6	...	...	...	...	2	2	1	1	...	...	1	1	3	...	1	...
Hydatid . . . . .	3	2	...	...	...	1	3	...	...	1	...	...	...	...	...	1	4	...
Sebaceous . . . . .	1	2	...	...	1	...	1	1	...	...	...	1	...	...	1	...	1	...
Morrant Baker . . . . .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...
Ovarian . . . . .	...	8	...	...	...	2	...	2	2	2	...	...	...	...	2	2	4	...
„ suppurating . . . . .	...	2	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2	...
Broad ligament . . . . .	...	3	...	...	...	...	3	...	...	...	...	...	1	...	...	...	2	...



according to authorised Nomenclature—continued.

Duration of residence.									Result.				Remarks.	
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts 1-2	Mts 2-4	Mts 4-6	Mts 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.		
3	9	4	2	...	...	...	...	...	17	...	1	...	Duct papilloma of breast 1, lip 1, tongue 1, palate 1. Nasal 13, rectal 7, frontal sinus empyema 1. Excision in all. Tonsils 6.	
1	1	1	1	...	...	...	...	...	3	...	1	...		
2	16	1	1	...	...	...	...	...	20	...	...	...		
9	10	...	1	...	...	...	...	...	20	...	...	...		
1	1	...	...	...	...	...	...	...	2	...	...	...		
...	2	...	...	...	...	...	...	...	2	...	...	...		
...	5	3	...	...	...	...	...	...	7	...	1	...		Phalanx 1, septum nasi 1. See "Sarcoma."
...	2	7	2	...	...	...	...	...	8	...	2	2		Subungual 2, metacarpal 1, frontal 2, fibula 1, humerus 1, septum nasi 1.
2	4	3	2	...	...	...	...	...	10	...	1	...		Fatal cases: marasmus 1, no P.M. 1.
...	5	5	...	...	...	...	...	...	10	...	...	...		Intermuscular of abdominal wall 1, intermuscular of neck 1, inguinal canal 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	Breast 10, interstitial mastitis 1.	
...	...	1	...	...	...	...	...	...	1	...	...	...	Breast with proliferous cysts 1.	
...	...	1	...	...	...	...	...	...	...	...	1	...	Superior maxilla. Fatal from phthisis 1.	
...	1	...	...	...	...	...	...	...	1	...	...	...	Palate.	
...	...	1	...	...	...	...	...	...	1	...	...	...	Thigh 1.	
1	3	...	1	...	...	...	...	...	1	...	3	1	Uterus 5.	
...	2	1	...	...	...	...	...	...	3	...	...	...	Cheek 3, chest 1.	
...	...	2	...	...	...	...	...	...	2	...	...	...		
1	2	...	...	...	...	...	...	...	3	...	...	...		
...	1	2	1	...	...	...	...	...	4	...	...	...		
...	...	...	...	1	...	...	...	...	1	...	...	...		
2	7	2	...	...	...	...	...	...	11	...	...	...		Inclusion dermoid 1.
...	1	1	...	...	...	...	...	...	2	...	...	...		Nature doubtful.
...	...	1	...	...	...	...	...	...	1	...	...	...		Canine 1, first molar 1. Cholesterine in both.
...	1	1	...	...	...	...	...	...	2	...	...	...		
...	2	...	...	...	...	...	...	...	2	...	...	...		
...	2	4	...	...	...	...	...	...	6	...	...	...		
1	...	1	2	1	...	...	...	...	4	...	1	...	Chronic interstitial mastitis 2, cystic disease of breast 1, proliferating and non-encapsuled 1.	
2	...	1	...	...	...	...	...	...	3	...	...	...	Readmission 1.	
...	...	...	1	...	...	...	...	...	1	...	...	...	Thoracic 1, sebaceous horn 1.	
...	...	4	4	...	...	...	...	...	7	...	...	1	Hip.	
...	...	...	1	1	...	...	...	...	1	...	...	1	Double 1. Fatal from peritonitis.	
...	...	...	...	...	...	...	...	...	1	...	...	...	Readmission 1.	
1	...	...	2	...	...	...	...	...	1	1	1	...	Readmission 1.	

TABLE I.—Abstract, showing Diseases, &amp;c., in Classes,

DISEASE.	Sex.		Age.								Duration before admission.								Chronic.	Not stated.
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12				
LOCAL DISEASES — continued.																				
Tumours, undetermined—																				
Liver . . . . .	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...		
Thigh . . . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...		
Inferior maxilla . . . . .	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...		
Pancreas . . . . .	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...		
Phantom tumour . . . . .	...	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...		
DIGESTIVE SYSTEM.																				
Parotitis . . . . .	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...		
Carious tooth . . . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1		
Acute tonsillitis . . . . .	1	1	...	1	...	1	...	...	...	...	1	1	...	...	...	...	...	...		
Ulcerative stomatitis . . . . .	1	1	2	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...		
Sublingual inflammation . . . . .	1	2	...	...	...	1	...	2	...	...	...	1	2	...	...	...	...	...		
Salivary calculus . . . . .	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...		
Dilated stomach . . . . .	2	...	...	...	...	1	...	...	1	...	...	...	...	1	...	...	1	...		
Acute glossitis . . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...		
Granular pharyngitis . . . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...		
Cancerum oris . . . . .	...	1	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...		
Foreign body in œso-phagus . . . . .	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...		
Hernia—																				
Inguinal, reducible . . . . .	126	1	8	10	39	51	19	11	3	...	3	9	11	13	14	14	69	8		
„ irreducible . . . . .	32	1	5	2	3	5	3	6	6	3	6	...	3	...	1	2	21	...		
„ strangulated . . . . .	23	2	2	...	1	4	7	6	1	4	25	...	...	...	...	...	...	...		
Femoral, reducible . . . . .	1	9	...	...	1	3	4	1	1	...	...	1	2	...	...	...	7	...		
„ irreducible . . . . .	1	9	...	...	1	1	4	3	1	...	...	...	...	1	1	1	7	...		
„ strangulated . . . . .	5	21	...	...	...	...	2	5	9	10	19	6	...	...	...	...	...	1		
Umbilical, irreducible . . . . .	1	1	...	...	...	1	1	...	...	...	...	...	...	...	...	...	1	1		
„ strangulated . . . . .	...	7	...	...	...	...	1	1	4	1	3	4	...	...	...	...	...	...		
Ventral, reducible . . . . .	1	1	...	...	...	1	...	...	1	...	...	...	...	...	...	1	...	1		
„ irreducible . . . . .	1	10	...	1	2	...	2	5	1	...	...	...	...	...	...	...	11	...		
Obturator, strangulated . . . . .	...	1	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...		
Appendicitis, acute . . . . .	4	5	...	1	3	1	1	3	...	...	2	2	3	...	...	1	...	1		
„ chronic . . . . .	7	7	...	...	3	5	4	1	1	...	...	...	1	2	3	2	6	...		
Intussusception . . . . .	4	...	3	...	...	...	1	...	...	...	2	2	...	...	...	...	...	...		
Strangulation by band . . . . .	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...		
Matting of small gut . . . . .	...	1	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...		
Effusion into lesser sac . . . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...		
Tuberculous peritonitis . . . . .	1	5	1	2	1	2	...	...	...	...	...	1	...	2	1	2	...	...		
Ulcerative colitis . . . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...		
Hæmorrhage from rectum . . . . .	...	3	...	...	...	1	2	...	...	...	...	...	...	...	...	...	3	...		

according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts 1-2	Mts 2-4	Mts 4-6	Mts 6-9	Mts 9-12	Mts. +12		C.	R.	U.	D.	
...	...	...	1	...	...	...	...	...	...	...	...	1	...	Multiple; probably sarcoma.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	...	...	...	1	...	
...	...	1	...	...	...	...	...	...	...	...	...	1	...	Possibly gummatous.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Disappeared.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
1	...	...	...	...	...	...	...	...	...	1	...	...	...	
1	1	...	...	...	...	...	...	...	...	1	...	...	...	
1	1	...	...	...	...	...	...	...	...	2	...	...	...	
...	1	1	...	...	...	...	...	...	...	2	...	...	...	
1	2	...	...	...	...	...	...	...	...	3	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Stone in duct.
...	...	...	1	1	...	...	...	...	...	2	...	...	...	
1	...	...	...	...	...	...	...	...	...	...	...	...	1	Fatal: fatty heart.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
1	...	...	...	...	...	...	...	...	...	...	...	...	1	
1	...	...	...	...	...	...	...	...	...	...	...	1	...	"At own request."
8	5	73	54	1	...	...	...	...	...	128	4	8	1	Fatal: septicæmia. See Special Table III.
13	3	10	7	...	...	...	...	...	...	17	15	...	1	Double 5.
4	2	16	3	...	...	...	...	...	...	24	...	...	1	Fatal: peritonitis.
2	2	2	3	...	...	...	...	...	...	7	1	2	...	Dorsal ganglion of hand 1.
...	...	5	5	...	...	...	...	...	...	10	...	...	...	
6	1	13	5	...	1	...	...	...	...	19	1	...	6	
...	...	2	...	...	...	...	...	...	...	1	...	...	1	
1	1	1	4	...	...	...	...	...	...	5	1	...	1	
...	2	...	...	...	...	...	...	...	...	...	...	2	...	Reducible inguinal hernia 1.
1	3	2	4	1	...	...	...	...	...	8	1	1	1	Readmission 1.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Double.
1	...	4	3	1	...	...	...	...	...	8	...	...	1	
...	...	6	7	1	...	...	...	...	...	13	...	1	...	
2	1	1	...	...	...	...	...	...	...	1	...	...	3	
...	...	...	1	...	...	...	...	...	...	...	...	...	1	Vide Hospital Reports, 1895.
...	1	...	...	...	...	...	...	...	...	...	...	...	1	Previous hysterectomy. Intestinal obstruction.
...	...	...	...	1	...	...	...	...	...	1	...	...	...	Vide Hospital Reports, 1895.
...	...	2	2	1	...	...	...	...	...	3	...	3	...	Transferred Medical 1, diphtheria 1, fæcal fistula 1.
...	...	...	1	...	...	...	...	...	...	...	...	...	1	
...	1	1	1	...	...	...	...	...	...	...	1	2	...	





according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12		C.	R.	U.	D.	
...	10	12	...	...	1	...	...	...	21	2	...	...	...	Previous excision of rectum 3; remainder syphilitic.
1	4	28	8	...	...	...	...	...	36	2	3	...	...	
...	3	5	3	2	...	...	...	...	2	10	1	...	...	
1	3	1	...	...	...	...	...	...	4	1	...	...	...	Glycosuria 1.
...	2	...	...	...	...	...	...	...	2	...	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	...	
...	1	...	1	...	...	...	...	...	2	...	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	...	
...	2	3	...	...	...	...	...	...	5	...	...	...	...	
...	1	...	...	1	...	...	...	...	1	1	...	...	...	
2	14	18	12	1	...	...	...	...	38	1	3	5	...	Abscess 1. Stricture 1.
...	2	1	1	...	...	...	...	...	4	...	...	...	...	
...	3	...	3	1	...	...	...	...	1	4	...	2	...	"At own request."
...	1	...	...	...	...	...	...	...	1	...	...	...	...	
1	...	...	...	...	...	...	...	...	...	1	...	...	...	Chronic renal 1. Gouty 1, soft sores 1.
...	1	...	...	...	...	...	...	...	1	...	...	...	...	
...	2	1	1	...	...	...	...	...	3	1	...	...	...	Readmission 1.
...	7	4	...	...	...	...	...	...	11	...	...	...	...	
1	2	...	...	...	...	...	...	...	3	...	...	...	...	Cause ?
...	1	2	...	...	...	...	...	...	3	...	...	...	...	
...	1	...	1	...	...	...	...	...	2	...	...	...	...	Temporary supra-pubic drainage. "At own request."
...	1	...	...	...	...	...	...	...	1	...	...	...	...	
...	4	3	...	...	...	...	...	...	1	4	2	...	...	Readmission 1. "At own request."
...	1	...	...	...	...	...	...	...	...	...	1	...	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Double 1. Readmission 1, pyonephrosis 1, hydronephrosis 1.
1	...	...	...	...	...	...	...	...	...	1	...	...	...	
...	1	3	6	...	...	...	...	...	8	...	1	1	...	Diabetes 1, double 1. Traumatic 2.
1	...	...	2	...	...	...	...	...	1	1	...	1	...	
...	...	...	2	...	1	...	...	...	3	...	...	...	...	Perinæal section. Oxalate calculus. Cause ? 3.
...	1	...	2	...	...	...	...	...	1	...	...	2	...	
...	1	...	...	...	...	...	...	...	1	2	...	...	...	Acquired reducible inguinal hernia 1; readmission 1. See "Reducible inguinal hernia."
...	2	5	6	...	...	...	...	...	10	...	3	...	...	

TABLE I.—Abstract, showing Diseases, &amp;c., in Classes,

DISEASE.	Sex.		Age.								Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic.	Not stated.
GENITO-URINARY SYSTEM																		
—continued.																		
Foreign body in bladder.	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...
Tuberculous testis .	11	...	...	...	...	6	3	...	2	...	...	...	4	1	4	...	1	1
Gummatous testis .	2	...	...	...	...	1	...	...	1	...	...	...	1	1	...	...	...	...
Acute orchitis .	2	...	...	...	...	2	...	...	...	...	1	1	...	...	...	...	...	...
Hydrocele of tunica vagi- nalis	13	...	...	...	7	3	1	1	1	...	...	...	1	...	3	3	6	...
„ of hernial sac.	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
„ of cord .	5	...	1	4	...	...	...	...	...	...	...	...	1	1	...	...	1	2
Spermatocele .	3	...	...	...	...	...	1	...	2	...	...	...	...	...	...	...	3	...
Accessory mamma .	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
Hypertrophy of mamma.	...	3	...	...	1	2	...	...	...	...	...	...	...	...	...	...	3	...
Previous carcinoma of breast	...	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...
Pelvic peritonitis .	...	2	...	...	...	2	...	...	...	...	...	...	...	...	...	...	2	...
Endometritis .	...	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...
Chronic interstitial mas- titis	...	5	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...
Pyosalpinx .	...	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...
VASCULAR SYSTEM.																		
Subclavian aneurysm .	3	...	...	...	...	...	...	2	1	...	...	...	...	2	...	...	1	...
Popliteal aneurysm, re- current	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
Varicose veins .	46	19	...	...	16	30	8	6	4	1	...	1	1	1	7	7	41	7
Varicocele .	65	...	...	...	34	29	2	...	...	...	...	1	2	3	7	12	20	20
Gangrene, senile .	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...
„ glycosuric .	4	1	...	...	...	...	...	1	1	3	...	1	2	2	1	...	...	...
„ albuminuric .	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...
„ septic .	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...
„ Raynaud's .	1	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...
„ simple traumatic	3	...	...	...	2	...	...	...	...	1	...	3	...	...	...	...	...	...
Thrombosis of veins .	4	1	...	...	...	3	1	...	...	1	...	1	3	...	1	...	...	...
Hæmophilia .	2	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	2	...
Hæmorrhage from tonsil	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...
LYMPHATIC SYSTEM.																		
Adenitis, simple .	6	4	1	...	5	3	1	...	...	...	...	3	...	2	1	2	...	2
„ tuberculous .	50	64	3	13	50	34	9	2	1	2	...	...	5	9	20	15	61	4
Lymphangitis .	5	...	...	...	1	3	1	...	...	...	2	1	...	...	...	...	...	2

according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12		C.	R.	U.	D.	
1	...	...	...	...	...	...	...	...	...	1	...	...	...	Hair-pin.
...	3	6	2	...	...	...	...	...	...	4	6	1	...	Readmission 1; empyema of antrum 1.
...	...	2	...	...	...	...	...	...	...	2	...	...	...	Hernia testis 1. Castration 1.
...	1	...	1	...	...	...	...	...	...	2	...	...	...	
...	4	7	2	...	...	...	...	...	...	13	...	...	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Omentum plugged, neck; sac excised.
...	2	3	...	...	...	...	...	...	...	5	...	...	...	
...	1	1	1	...	...	...	...	...	...	3	...	...	...	Hæmatocele 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Axillary; excised.
1	...	1	...	1	...	...	...	...	...	1	2	...	...	Readmission 1.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Amputation and axilla cleared.
...	...	1	1	...	...	...	...	...	...	2	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Transferred to Adelaide.
...	...	...	1	...	...	...	...	...	...	4	...	1	...	
...	...	...	1	...	...	...	...	...	...	...	...	1	...	
1	...	...	1	...	...	1	...	...	...	1	...	1	1	Readmission 1. <i>Vide</i> 'Med.-Chir. Trans.,' 1896—7.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	
2	8	46	8	1	...	...	...	...	...	59	5	1	...	"At own request" 1. Varicocele 1, ulcers 3. Double 15. Lower extremity in all. Ruptured 2. Candidates for "services" 13.
3	11	47	4	...	...	...	...	...	...	62	...	3	...	Hydrocele of tunica vaginalis 1, recurrent 1, thrombosed 1. Candidates for "services" 13.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	3	2	...	...	...	...	...	...	2	...	...	3	
...	1	...	...	...	...	...	...	...	...	...	...	1	...	
...	1	...	...	...	...	...	...	...	...	...	...	...	1	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	1	2	...	...	...	...	...	...	...	3	...	...	...	Digits in all.
...	2	2	1	...	...	...	...	...	...	2	3	...	...	Malignant disease of abdomen found post mortem after discharge from hospital.
1	1	...	...	...	...	...	...	...	...	2	...	...	...	Bleeding from tooth socket 2.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	After excision.
2	3	3	1	1	...	...	...	...	...	7	3	...	...	
4	26	67	16	1	...	...	...	...	...	110	2	1	1	Axilla 1; readmission 2. Fatal case: emaciation.
1	4	...	...	...	...	...	...	...	...	5	...	...	...	

TABLE I.—*Abstract, showing Diseases, &c., in Classes,*

DISEASE.	Sex.		Age.								Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic.	Not statel.
<b>THYROID.</b>																		
Goitre, parenchymatous .	1	8	...	...	3	1	2	...	3	...	...	...	...	...	...	2	6	1
„ adenoma .	...	4	...	...	...	...	2	2	...	...	...	...	1	...	...	...	3	...
„ cyst .	1	2	...	...	1	...	1	...	...	1	...	...	1	...	1	...	1	...
<b>OSSEOUS SYSTEM.</b>																		
<i>Acute epiphysitis—</i>																		
Femur .	2	3	4	...	1	...	...	...	...	...	3	...	1	...	...	...	...	1
Humerus .	2	...	2	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...
Radius :	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...
<i>Tuberculous epiphysitis—</i>																		
Humerus .	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Femur .	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...
<i>Syphilitic epiphysitis—</i>																		
Tibia .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
<i>Acute infective osteomyelitis—</i>																		
Occipital bone .	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Radius .	...	1	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Femur .	6	3	2	1	6	...	...	...	...	...	6	2	1	...	...	...	...	...
Tibia .	6	...	...	3	3	...	...	...	...	...	1	4	1	...	...	...	...	...
Fibula .	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...
Metatarsus .	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...
<i>Periostitis—</i>																		
Clavicle .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Superior maxilla .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...
Ulna .	1	1	...	...	...	1	1	...	...	...	1	1	...	...	...	...	...	...
Tibia .	1	4	...	...	3	1	...	...	...	1	1	1	...	...	2	...	...	1
<i>Osteitis—</i>																		
Skull .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Humerus .	4	...	1	3	...	...	...	...	...	...	...	...	...	...	1	...	3	...
Radius .	...	2	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2	...
Ulna .	...	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...
Phalanges .	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Femur .	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...
Mollities ossium .	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
<i>Caries—</i>																		
Ulna .	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Sternum .	1	1	...	...	1	1	...	...	...	...	...	...	...	...	1	1	...	...



according to authorised Nomenclature—continued.

Duration of residence.										R. sub.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12		C.	R.	U.	D.	
...	2	6	1	...	...	...	...	...	3	5	1	...	...	Readmission 1. ? Exophthalmic 1.
...	...	4	...	...	...	...	...	...	2	1	1	...	...	Readmission 1.
...	...	2	1	...	...	...	...	...	3	...	...	...	...	
...	1	1	2	...	...	...	1	...	3	...	...	2	...	Lower 4, upper 1.
...	...	2	...	...	...	...	...	...	1	1	...	...	...	Readmission 1.
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Lower 1.
...	...	...	...	1	...	...	...	...	...	...	...	...	1	
...	...	...	...	1	...	...	...	...	1	...	...	...	...	
...	...	1	...	...	...	...	...	...	...	...	1	...	...	Radius 1. Congenital.
...	...	...	1	...	...	...	...	...	...	...	...	1	...	Fatal from pyæmia. See 'Annals of Surgery,' 1896.
1	...	...	...	...	...	...	...	...	...	...	...	1	...	
1	1	2	1	1	1	1	1	...	5	1	...	3	...	Fatal: pyæmia 1.
...	...	...	3	1	1	1	...	...	6	...	...	...	...	Tarsus included 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Syphilitic 1.
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Gummatous.
...	2	...	...	...	...	...	...	...	1	1	...	...	...	Gummatous 1.
...	2	2	...	1	...	...	...	...	4	1	...	...	...	Gummatous 5.
...	...	...	...	1	...	...	...	...	...	...	1	...	...	Gummatous.
...	1	2	1	...	...	...	...	...	1	3	...	...	...	Tuberculous 4. Readmissions 2.
1	1	...	...	...	...	...	...	...	1	1	...	...	...	Cause? Readmission 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Tuberculous.
...	...	1	...	...	...	...	...	...	1	...	...	...	...	
...	...	...	...	1	...	...	...	...	1	...	...	...	...	Tibia and fibula; nature? Vide 'Transactions of Pathological Society,' 1897.
...	...	...	1	...	...	...	...	...	1	...	...	...	...	
...	...	2	...	...	...	...	...	...	2	...	...	...	...	Rib 1.

TABLE I.—*Abstract, showing Diseases, &c., in Classes.*

DISEASE.	Sex.		Age.								Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-13	Wks 2-4	Mts 1-2	Mts 2-6	Mts. 6-12	Chronic.	Not stated.
<b>OSSEOUS SYSTEM — con-</b>																		
<i>tinued.</i>																		
<i>Caries—continued.</i>																		
Rib . . . . .	4	4	1	1	1	3	2	...	...	...	...	1	...	2	2	...	2	1
Tibia . . . . .	4	5	...	...	5	3	..	...	1	...	...	...	1	2	1	...	5	...
Ischium . . . . .	2	...	...	...	1	...	...	...	...	1	...	...	...	2	...	...	...	...
Phalanges . . . . .	...	2	1	1	...	...	...	...	...	...	...	...	...	...	1	...	...	1
Femur . . . . .	...	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...
Ilium . . . . .	...	1	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Metatarsus . . . . .	...	1	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Radius . . . . .	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Scapula . . . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Metacarpus . . . . .	1	1	...	...	1	1	...	...	...	...	...	...	...	...	...	1	1	...
Petrous bone . . . . .	...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Humerus . . . . .	2	1	1	1	...	...	1	...	...	...	...	...	...	...	1	1	1	...
Tarsus . . . . .	...	2	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2	...
<i>Necrosis—</i>																		
Inferior maxilla . . . . .	5	10	3	1	1	2	4	3	1	...	...	2	3	4	4	1	...	1
Phalanges . . . . .	2	...	...	...	1	...	...	...	...	1	...	...	...	1	...	...	1	...
Tibia . . . . .	17	4	1	2	13	1	3	...	1	...	...	...	2	4	5	4	4	2
Femur . . . . .	9	4	...	1	8	2	1	1	...	...	...	...	2	3	1	6	1	...
Ilium . . . . .	1	2	...	1	1	1	...	...	...	...	...	...	...	...	1	1	1	...
Metatarsus . . . . .	3	3	...	2	2	...	...	...	...	2	...	2	...	2	...	...	2	...
Malar . . . . .	1	1	1	1	...	...	...	...	...	...	...	...	...	1	1	...	...	...
Calvarium . . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
Pubes . . . . .	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Clavicle . . . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Tarsus . . . . .	3	...	...	1	...	...	1	1	...	...	...	...	...	2	1	...	...	...
Palate . . . . .	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
Ischium . . . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...
Radius . . . . .	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...
<b>ARTICULAE SYSTEM.</b>																		
<i>Shoulder—</i>																		
Tuberculous arthritis . . . . .	3	2	...	...	...	3	...	...	...	2	...	...	...	1	...	2	2	...
Ankylosis . . . . .	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
<i>Elbow—</i>																		
Tuberculous arthritis . . . . .	2	5	...	3	2	1	...	...	1	...	...	...	1	1	1	...	4	...
Gonorrhœal arthritis . . . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...
Ankylosis . . . . .	...	2	...	...	...	...	1	1	...	...	...	...	...	...	...	...	2	...
<i>Wrist—</i>																		
Tuberculous arthritis . . . . .	4	2	...	...	1	2	2	...	1	...	...	...	...	1	2	1	2	...
Gonorrhœal arthritis . . . . .	1	2	...	...	1	1	1	...	...	...	1	1	...	1	...	...	...	...

according to authorised *Nomenclature*—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts 1-2	Mts. 2-4	Mts 4-6	Mts. 6-9	Mts. 9-12	Mts +12		C.	R.	U.	D.	
...	3	4	1	...	...	...	...	...	4	4	...	...	...	Abscess of tibia 4. Os calcis 1, astragalus 1.
...	...	2	6	1	...	...	...	...	4	...	...	...	...	
...	...	1	1	...	...	...	...	...	2	...	...	...	...	
...	...	...	2	...	...	...	...	...	2	...	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	...	
...	2	...	...	...	...	...	...	...	2	...	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	...	Abscess of lesser tuberosity 1. Os calcis 2.
...	...	2	1	...	...	...	...	...	2	1	...	...	...	
...	1	1	...	...	...	...	...	...	2	...	...	...	...	Fatal: tuberculous broncho-pneumonia. Fibula 2. Readmission 1. Spontaneous fracture 1. Fatal: extensive disease of pelvic bones.
1	6	7	1	...	...	...	...	...	13	...	1	1	...	
...	1	1	...	...	...	...	...	...	2	...	...	...	...	
2	4	7	6	1	1	...	...	...	10	11	...	...	...	
...	2	2	4	5	...	...	...	...	7	6	...	...	...	
1	1	1	...	...	...	...	...	...	1	...	1	1	...	Fatal: tuberculous hip. Os calcis 2.  Atony of bladder 1, senile 1, caries sicca. Sinus. Previous tuberculous arthritis. Caries of humerus. Excision.  Tuberculous ankle 1, ganglion of wrist 1.
...	...	4	2	...	...	...	...	...	6	...	...	...	...	
...	2	...	...	...	...	...	...	...	...	2	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	...	
...	...	...	...	1	...	...	...	...	...	...	1	...	...	
...	1	...	...	...	...	...	...	...	...	...	3	...	...	
...	...	...	3	...	...	...	...	...	...	...	1	...	...	
...	1	...	...	...	...	...	...	...	...	...	1	...	...	
...	...	...	1	...	...	...	...	...	...	...	1	...	...	
...	...	...	1	...	...	...	...	...	...	...	1	...	...	
...	...	...	1	...	...	...	...	...	...	...	...	...	...	Atony of bladder 1, senile 1, caries sicca. Sinus. Previous tuberculous arthritis. Caries of humerus. Excision.  Tuberculous ankle 1, ganglion of wrist 1.
1	2	1	1	...	...	...	...	...	4	...	1	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	...	
...	1	2	2	2	...	...	...	...	1	6	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Tuberculous ankle 1, ganglion of wrist 1.
...	...	...	2	...	...	...	...	...	...	2	...	...	...	
...	3	1	2	...	...	...	...	...	3	3	...	...	...	
...	1	...	2	...	...	...	...	...	1	2	...	...	...	Tuberculous ankle 1, ganglion of wrist 1.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	

TABLE I.—Abstract, showing Diseases, &amp;c., in Classes,

DISEASE.	Sex.		Age.								Duration before admission.								
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic.	Not stated.	
ARTICULAR SYSTEM— <i>con-</i> <i>tinued.</i>																			
<i>Hip—</i>																			
Tuberculous arthritis	22	34	13	14	20	7	2	...	...	...	...	...	2	2	7	11	34	...	
Osteo-arthritis	2	...	...	...	...	...	...	...	1	1	...	...	...	...	...	1	1	...	
Arthritis	2	1	...	1	2	...	...	...	...	...	...	...	1	1	1	...	...	...	
Hysterical	...	3	...	...	2	1	...	...	...	...	...	...	...	1	...	...	2	...	
Ankylosis	6	...	...	...	3	3	...	...	...	...	...	...	...	...	...	1	5	...	
<i>Knee—</i>																			
Tuberculous arthritis	20	13	8	7	8	4	2	2	2	...	...	1	...	4	3	4	20	1	
Gonorrhœal arthritis	6	2	...	...	...	5	3	...	...	...	...	1	2	4	1	...	...	...	
Arthritis	3	4	...	...	3	1	1	2	...	...	...	...	...	1	4	1	1	...	
Synovitis	3	1	...	...	1	2	...	1	...	...	1	...	...	...	...	...	3	...	
Suppurative arthritis	...	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	
Hysterical	...	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	
Osteo-arthritis	2	...	...	...	...	...	2	...	...	...	...	...	...	...	1	...	1	...	
Ankylosis	6	3	...	...	3	4	2	...	...	...	...	...	...	...	1	...	8	...	
Loose bodies	2	...	...	...	1	1	...	...	...	...	...	...	1	...	...	1	...	...	
Dislocation of semilunar cartilage	5	...	...	...	...	3	1	1	...	...	...	...	...	...	2	...	3	...	
<i>Ankle—</i>																			
Tuberculous arthritis	10	2	2	1	4	5	...	...	...	...	...	1	...	...	2	4	5	...	
Suppurative arthritis	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	
Ankylosis	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	
<i>Tarsus—</i>																			
Tuberculous	1	1	...	...	1	1	...	...	...	...	...	...	...	...	...	...	2	...	
<i>Sacro-iliac disease.</i>																			
Adhesion in joints	1	1	...	...	1	1	...	...	...	...	...	...	...	...	1	1	...	...	
	6	2	...	...	...	2	2	4	...	...	...	...	...	...	3	...	3	2	
NERVOUS SYSTEM.																			
Neuritis	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	
Neuralgia	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	
Ulna in scar tissue	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	
Ulna and median divided	...	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	
Ulna divided	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	
Sciatica	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	
Degeneration of muscles	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	
Cerebral abscess	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	



according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12		C.	R.	U.	D.	
3	5	14	19	10	2	3	...	...		1	47	2	6	Fatal: cerebral abscess 1. Readmission 6. Transferred to Medical 1.
...	2	...	...	...	...	...	...	...		...	2	...	...	
...	...	1	2	...	...	...	...	...		1	2	...	...	Cause? 3.
...	1	2	...	...	...	...	...	...		1	1	1	...	
...	...	1	3	2	...	...	...	...		3	2	1	...	Caries of femur 1.
1	4	8	13	6	1	...	...	...		10	22	...	1	
...	3	2	1	2	...	...	...	...		1	7	...	...	Shoulder and ankles 1.
...	2	1	4	...	...	...	...	...		...	6	1	...	Cause? 7. Readmission 1.
...	1	1	...	2	...	...	...	...		...	3	1	...	Cause? 2. Consecutive 1, syphilitic 1.
...	...	...	1	...	...	...	...	...		1	...	...	...	Post-puerperal; arthrotomy and drainage.
...	1	...	...	...	...	...	...	...		...	1	...	...	
...	...	1	...	1	...	...	...	...		...	2	...	...	Spine also 1.
...	...	2	5	2	...	...	...	...		2	7	...	...	Readmission 1.
...	1	...	1	...	...	...	...	...		1	...	1	...	
...	1	2	2	...	...	...	...	...		3	2	...	...	
...	3	4	1	1	...	...	...	...		2	10	...	...	
...	...	...	...	...	1	...	...	...		1	...	...	...	
...	...	1	...	...	...	...	...	...		...	1	...	...	Fibrous.
...	...	1	...	1	...	...	...	...		...	2	...	...	Incisions 1, P.P.S. 1. Family history of phthisis
...	...	...	1	1	...	...	...	...		...	2	...	...	1. Trauma 1.
2	2	2	2	...	...	...	...	...		4	4	...	...	Gonorrhœal 3.
...	...	...	1	...	...	...	...	...		...	1	...	...	
...	1	...	...	...	...	...	...	...		...	1	...	...	Popliteal nerves.
...	...	1	...	...	...	...	...	...		...	1	...	...	Trigeminal.
...	...	...	1	...	...	...	...	...		...	1	...	...	
...	...	...	1	...	...	...	...	...		...	1	...	...	
...	...	1	...	...	...	...	...	...		...	1	...	...	
...	...	1	...	...	...	...	...	...		...	1	...	...	After fracture.
...	1	...	...	...	...	...	...	...		...	...	1	...	See "Compound depressed fracture of skull."

TABLE I.—*Abstract, showing Diseases, &c., in Classes,*

DISEASE.	Sex.		Age.								Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic.	Not stated.
<b>RESPIRATORY SYSTEM.</b>																		
Empyema	3	1	...	...	1	1	...	2	...	...	...	...	1	...	...	...	3	...
Syphilitic laryngitis	2	1	...	...	...	...	2	...	1	...	...	...	1	...	...	1	1	...
Empyema of antrum	5	9	...	...	3	9	1	...	1	...	...	...	...	1	...	1	11	1
Hypertrophic rhinitis	...	2	...	...	...	2	...	...	...	...	...	...	...	...	1	...	1	...
Ozæna	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Nasal obstruction	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
Foreign body in larynx	1	1	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...
Inability to leave out tube	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Tracheal fistula	...	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	2	...
Stenosis of larynx	...	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...
<b>AUDITORY SYSTEM.</b>																		
Meatal abscess	1	1	1	...	...	1	...	...	...	...	...	...	2	...	...	...	...	...
Foreign body in meatus	...	1	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Aural polyp	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Myringitis acuta	...	3	...	...	...	3	...	...	...	...	...	2	1	...	...	...	...	...
Sclerosis of mastoid	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Otitis media suppurativa	5	7	3	1	7	1	...	...	...	...	...	...	3	1	...	1	7	...
Do. and mastoid abscess	23	22	11	5	13	11	4	1	...	...	2	4	5	9	3	4	16	2
Do. do. and thrombosis of sinus	1	2	...	1	2	...	...	...	...	...	...	...	1	...	...	...	2	...
Do. do. do. and cerebellar abscess	1	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...	2	...
Do. do. do. and cerebral abscess	...	2	...	...	1	1	...	...	...	...	...	...	...	1	1	...	...	...
<b>DISEASES OF SPINE.</b>																		
Cervical caries	3	1	1	2	1	...	...	...	...	...	...	...	...	...	...	...	4	...
Dorsal caries	17	8	6	5	9	...	4	1	...	...	...	...	2	2	4	3	11	3
Lumbar caries	7	3	1	2	3	4	...	...	...	...	...	...	1	1	1	1	6	...
<b>DISEASES OF BURSE, &amp;c.</b>																		
Acute bursitis	9	14	...	2	6	6	5	2	...	1	8	6	4	2	1	1	...	1
Chronic bursæ	5	8	...	2	2	6	2	1	...	...	...	...	1	...	2	2	8	...
Ganglion, simple	2	9	...	...	3	4	3	...	...	1	...	...	...	...	...	2	7	...
„ compound	...	3	...	...	2	...	...	1	...	...	...	...	...	1	1	...	1	...
Teno-synovitis, simple	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...
„ tuberculous	8	1	...	...	1	1	2	2	3	...	...	...	...	...	2	1	6	...

according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys.	Dys.	Wks.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12						
...	...	1	2	1	...	...	...	...	...	3	...	1	...	Fatal: caseous broncho-pneumonia.
...	1	1	...	1	...	...	...	...	...	3	...	...	...	
2	4	4	4	...	...	...	...	...	...	10	4	...	...	Antrum of Highmore 12; frontal sinus 5. Readmission 3.
...	2	...	...	...	...	...	...	...	...	1	1	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
1	1	...	...	...	...	...	...	...	...	1	...	...	1	Walnut shell, fish-bone.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Previous tracheotomy.
1	1	...	...	...	...	...	...	...	...	2	...	...	...	Old tracheotomy.
1	...	...	...	...	...	...	...	...	...	1	...	...	...	Syphilitic.
1	1	...	...	...	...	...	...	...	...	1	1	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	1	2	...	...	...	...	...	...	...	3	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Double syphilitic.
...	5	6	1	...	...	...	...	...	...	1	11	...	...	Readmission 1.
2	9	25	9	...	...	...	...	...	...	39	2	4	...	
...	...	1	1	1	...	...	...	...	...	1	...	...	2	Septic thrombosis 2.
...	1	1	...	...	...	...	...	...	...	...	...	...	2	Septic thrombosis 2.
...	2	...	...	...	...	...	...	...	...	...	...	...	2	Septic thrombosis 1. Temporo-sphenoidal ab- scess 2.
2	...	1	1	...	...	...	...	...	...	4	...	...	...	Abscess 1. Cervico-dorsal 1.
...	5	3	13	4	...	...	...	...	...	1	20	4	...	Dorsal abscess 3, psoas 9, lumbar 2, gluteal 1. Paraplegia 1. Dorso-lumbar 1. Addison's disease 1. Tuberculous hip 1.
...	1	3	3	3	...	...	...	...	...	7	1	2	...	Psoas abscess 5, lumbar 1, gluteal 1. Paraplegia 1. Tuberculous knee 1. Fatal: amyloid. Lumbar dorsal 2.
1	20	2	...	...	...	...	...	...	...	23	...	...	...	Bursa patellæ 20, olecranon 3.
...	7	5	1	...	...	...	...	...	...	12	1	...	...	Subdeltoid 1, semi-membranous 3, bursa patellæ 5, metatarsal phalangeal 1, subsartorial 1, hyoid 1, internal malleolus 1.
2	6	3	...	...	...	...	...	...	...	11	...	...	...	Wrist 7, knee 1, foot 2, finger 1.
...	...	2	1	...	...	...	...	...	...	2	1	...	...	Wrist 3.
1	...	...	...	...	...	...	...	...	...	1	...	...	...	Ankle 1.
...	2	6	1	...	...	...	...	...	...	3	6	...	...	Wrist 5, ankle 3. Readmission 1.

TABLE I.—*Abstract, showing Diseases, &c., in Classes.*

DISEASE.	Sex.		Age.								Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic.	Not stated.
<b>DISEASES OF SKIN AND CONNECTIVE TISSUE.</b>																		
<i>Acute abscess</i> . . . . .	93	50	17	12	36	35	20	13	6	4	17	27	44	20	3	1	...	31
<i>Tuberculous abscess—</i>																		
Back . . . . .	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Multiple . . . . .	1	1	1	...	...	...	1	...	...	...	...	1	...	...	1	...	...	...
Neck . . . . .	2	4	...	...	2	1	2	1	...	...	...	3	2	1	...	...	...	...
Thigh . . . . .	3	4	1	...	3	...	2	...	1	...	...	1	1	3	...	2	...	...
Psoas . . . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...
Popliteal . . . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...
Lumbar . . . . .	2	...	...	1	...	...	...	...	...	...	...	1	1	...	...	...	...	...
Forearm . . . . .	2	...	...	2	...	...	...	...	...	...	...	...	...	2	...	...	...	...
Arm . . . . .	...	2	...	...	1	...	...	...	1	...	...	...	1	...	...	...	1	...
Buttock . . . . .	...	2	1	...	...	...	...	...	1	...	...	...	1	1	...	...	...	...
Hand . . . . .	...	1	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Loin . . . . .	3	...	1	...	1	...	...	1	...	...	...	...	...	1	1	...	...	1
Scalp . . . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Iliac . . . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...
Abdominal wall . . . . .	...	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...
Shoulder . . . . .	...	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...
Hyoid . . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
Leg . . . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...
<i>Special abscess—</i>																		
Perinephritic . . . . .	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...
Abdominal . . . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...
Recto-vaginal . . . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...
Pelvic . . . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...
Sublingual . . . . .	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...
Subdiaphragmatic . . . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...
Submammary . . . . .	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
Retro-pharyngeal . . . . .	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
<i>Ulcer—</i>																		
Simple . . . . .	10	9	1	...	10	5	2	...	1	...	...	1	2	1	1	2	5	7
Varicose . . . . .	1	2	...	...	1	...	2	...	...	...	...	...	...	...	...	2	1	...
Perforating . . . . .	5	2	...	...	...	1	2	2	2	...	...	...	...	1	1	1	4	...
Serpiginous . . . . .	...	1	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Syphilitic . . . . .	1	1	...	...	...	...	1	...	1	...	...	...	1	...	...	...	1	...
Circular . . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
<i>Sinus</i> . . . . .	12	11	1	3	7	8	2	...	1	1	...	...	...	4	6	1	10	2



according to authorised *Nomenclature*—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12		C.	R.	U.	D.	
16	78	31	16	2	...	...	...	...	13	3	...	2		Fatal cases: broncho-pneumonia 1, miliary tubercle of lung 1.
...	...	1	...	...	...	...	...	...	1	...	...	...		
1	...	...	1	...	...	...	...	...	...	1	...	1		
...	4	2	...	...	...	...	...	...	...	6	...	...		
1	...	5	1	...	...	...	...	...	...	7	...	...		Forearm 1.
...	...	...	...	...	...	1	...	...	...	...	1	...		
...	...	1	...	...	...	...	...	...	...	1	...	...		
...	...	2	...	...	...	...	...	...	...	2	...	...		
...	...	2	...	...	...	...	...	...	...	2	...	...		Readmission 1.
...	1	1	...	...	...	...	...	...	...	1	1	...		
1	...	1	...	...	...	...	...	...	...	...	...	2		Fatal: shock 1, 'lobar pneumonia,' 1.
...	1	...	...	...	...	...	...	...	...	1	...	...		
...	...	2	1	...	...	...	...	...	...	2	1	...		
...	1	...	...	...	...	...	...	...	...	1	...	...		
...	...	...	1	...	...	...	...	...	...	1	...	...		
...	1	...	...	...	...	...	...	...	...	1	...	...		
...	...	1	...	...	...	...	...	...	...	1	...	...		
...	1	...	...	...	...	...	...	...	...	1	...	...		
...	...	1	...	...	...	...	...	...	...	1	...	...		
...	...	...	1	...	...	...	...	...	...	1	...	...		Previous lumbar nephrolithotomy, two uric acid stones extracted.
...	...	...	1	...	...	...	...	...	...	1	...	...		Intra-peritoneal. Previous radical cure of hernia.
...	1	...	...	...	...	...	...	...	...	1	...	...		Cause?
...	...	1	...	...	...	...	...	...	...	1	...	...		Cause?
...	...	1	...	...	...	...	...	...	...	1	...	...		Cause? Perisplenic.
...	1	...	...	...	...	...	...	...	...	1	...	...		
...	1	...	...	...	...	...	...	...	...	1	...	...		
2	6	7	2	2	...	...	...	...	...	13	4	2	...	
1	...	1	1	...	...	...	...	...	...	2	...	...	1	Fatal: fatty heart and chronic nephritis.
...	1	6	...	...	...	...	...	...	...	1	6	...	...	Glycosuria 1, ataxy 1.
...	1	...	...	...	...	...	...	...	...	...	...	1	...	Nature?
...	...	1	1	...	...	...	...	...	...	...	2	...	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	
4	7	6	5	1	...	...	...	...	...	8	11	2	2	Fatal: exophthalmic goitre 1, acute nephritis 1.

TABLE I.—*Abstract, showing Diseases, &c., in Classes,*

DISEASE.	Sex.		Age.								Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 3-6	Mts. 6-12	Chronic.	Not stated.
<b>DISEASES OF SKIN AND CONNECTIVE TISSUE</b>																		
<i>—continued.</i>																		
<i>Cellulitis—</i>																		
Extremities . . .	33	21	1	4	3	10	8	18	4	6	8	21	7	4	...	...	...	14
Face . . .	4	3	1	...	2	...	1	1	2	...	2	4	...	...	...	...	...	1
Neck . . .	2	1	1	...	...	1	...	...	...	1	1	...	...	1	1	...	...	...
Abdominal wall . .	1	1	1	...	...	...	...	1	...	...	...	...	2	...	...	...	...	...
Pelvic . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...
Tuberculosis of skin	8	24	...	1	14	13	1	2	...	1	...	...	...	...	3	1	27	1
Syphilitic lupus . .	...	2	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2	...
Acute eczema . . .	3	1	2	...	...	...	...	1	...	1	...	1	1	1	...	...	...	1
Dermatitis exfoliativa	...	2	...	...	2	...	...	...	...	...	...	...	...	1	1	...	...	...
Morphœa . . .	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...
Granular lids . . .	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
Carbuncle . . .	4	3	...	...	...	...	...	4	1	2	...	1	2	...	...	...	...	4
Herpes . . .	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...
Multiple boils . . .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
<b>DEFORMITIES.</b>																		
Talipes equino-varus	6	5	4	4	2	1	...	...	...	...	...	...	...	...	1	...	10	...
„ equinus . . .	13	7	...	6	10	3	1	...	...	...	...	...	...	1	...	...	19	...
Genu valgum . . .	6	6	3	1	8	...	...	...	...	...	...	...	...	...	1	6	4	1
„ varum . . .	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Torticollis . . .	2	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...	3	...
Cicatricial contraction	5	7	2	5	2	3	...	...	...	...	...	...	...	1	...	1	9	1
Dupuytren's contraction	5	...	...	...	...	...	...	3	...	2	...	...	...	...	...	...	5	...
Hammer-toe . . .	11	8	...	...	11	7	1	...	...	...	...	...	...	...	1	1	17	...
Pes planus . . .	5	5	...	...	4	6	...	...	...	...	...	...	...	...	1	1	8	...
Hallux valgus . . .	2	1	...	...	1	2	...	...	...	...	...	...	...	...	1	1	1	...
Patent abdominal ring	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...
Infantile paralysis	1	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	2	...
Divided tendon . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Deflected septum . .	2	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2	...
Contracted fingers	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
Deformed nose . . .	2	8	...	...	2	1	3	4	...	...	...	...	...	...	2	...	8	...
Dorsal dislocation of hip	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
Deformed ear . . .	...	2	...	...	1	1	...	...	...	...	...	...	...	...	...	...	2	...
Deformed tibia . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Ingrowing toe-nail	...	3	...	...	2	1	...	...	...	...	...	...	...	...	1	1	1	...
Bowed tibia . . .	...	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...
Matted tendons . . .	...	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...

according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12		C.	R.	U.	D.	
3	22	18	10	1	...	...	...	...	50	1	...	3		Fatal: fatty heart, œdema of lungs, pyæmia.
2	3	2	...	...	...	...	...	...	7	...	...	...		
1	2	...	...	...	...	...	...	...	3	...	...	...		
1	1	...	...	...	...	...	...	...	1	...	...	1		Fatal: marasmus.
...	1	...	...	...	...	...	...	...	...	...	...	1		Septicæmia.
5	8	12	7	...	...	...	...	...	13	17	2	...		
...	...	2	...	...	...	...	...	...	...	2	...	...		Readmission 1.
...	1	3	...	...	...	...	...	...	2	...	...	2		Fatal: diarrhœa and broncho-pneumonia.
...	...	1	...	1	...	...	...	...	1	1	...	...		Readmission 1.
...	1	...	...	...	...	...	...	...	...	...	1	...		
...	...	1	...	...	...	...	...	...	1	...	...	...		
...	...	5	2	...	...	...	...	...	6	...	...	1		
...	1	...	...	...	...	...	...	...	1	...	...	...		Third sacral nerve.
...	...	1	...	...	...	...	...	...	1	...	...	...		
...	4	...	2	5	...	...	...	...	7	4	...	...		Double 2. Paralytic 3. Pes cavus 1. Talimanus 1.
2	8	9	1	...	...	...	...	...	4	15	1	...		Paralytic 19, spastic 1. Pes cavus 13. Double 5. Readmissions 2.
...	1	...	6	5	...	...	...	...	10	2	...	...		Double 7. Pes planus 1.
...	...	...	1	...	...	...	...	...	1	...	...	...		Double 1.
...	...	2	1	...	...	...	...	...	1	2	...	...		Constant.
...	1	4	4	2	...	1	...	...	8	3	1	...		Finger 3, face 4, arms 2, elbow 2, popliteal 1.
...	2	3	...	...	...	...	...	...	5	...	...	...		
...	9	9	1	...	...	...	...	...	19	...	...	...		
3	5	1	...	1	...	...	...	...	10	...	...	...		Readmissions 2.
...	...	2	1	...	...	...	...	...	3	...	...	...		
...	...	...	1	...	...	...	...	...	1	...	...	...		
...	1	...	1	...	...	...	...	...	...	2	...	...		Flail leg 1, contracted peronei 1.
...	...	1	...	...	...	...	...	...	1	...	...	...		
...	1	1	...	...	...	...	...	...	2	...	...	...		
...	...	...	...	1	...	...	...	...	...	1	...	...		Myositis.
1	...	4	4	1	...	...	...	...	7	2	1	...		
...	1	...	...	...	...	...	...	...	...	...	1	...		Pathological.
1	1	...	...	...	...	...	...	...	2	...	...	...		
...	1	...	...	...	...	...	...	...	...	1	...	...		Trauma?
...	3	...	...	...	...	...	...	...	3	...	...	...		
...	1	...	...	1	...	...	...	...	1	...	1	...		Rachitis 1, femur also 1.
...	1	...	...	...	...	...	...	...	1	...	...	...		

TABLE I.—*Abstract, showing Diseases, &c., in Classes,*

DISEASE.	Sex.		Age.									Duration before admission.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60		Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-6	Mts. 6-12	Chronic	Not stated.
<b>DEFORMITIES—continued.</b>																			
Hallux rigidus . . . . .	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Lateral displacement of nose . . . . .	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Stiff digits . . . . .	2	...	...	...	...	...	1	1	...	...	...	...	...	...	...	1	1	...	...
Painful stump . . . . .	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Deformed little toe . . . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Displaceable patella . . . . .	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Laxity of knee ligaments . . . . .	...	1	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
<b>MALFORMATIONS.</b>																			
Single harelip . . . . .	3	2	5	...	...	...	...	...	...	...	...	...	...	...	1	1	2	1	...
Double harelip . . . . .	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Single harelip and cleft palate . . . . .	5	2	7	...	...	...	...	...	...	...	...	...	...	...	3	3	...	1	...
Double harelip and cleft palate . . . . .	10	3	13	...	...	...	...	...	...	...	1	1	2	3	3	1	1	1	...
Cleft palate . . . . .	5	6	6	2	1	1	1	...	...	...	...	...	...	...	...	...	...	11	...
Perforated palate . . . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Branchial fistula and cyst . . . . .	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Congenital hip . . . . .	2	4	1	2	3	...	...	...	...	...	...	...	...	...	...	...	...	6	...
Spina bifida . . . . .	5	5	9	...	...	1	...	...	...	...	2	2	...	1	...	1	4	...	...
Congenital absence of tibia . . . . .	1	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...
Imperforate rectum . . . . .	1	5	6	...	...	...	...	...	...	...	5	1	...	...	...	...	...	...	...
Hypospadias . . . . .	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
Deformed fingers . . . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Imperforate small gut . . . . .	...	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Epispadias . . . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Extroversion of bladder . . . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Imperforate anus . . . . .	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Deformed elbow . . . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Failure of union of recti . . . . .	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
<b>MEDICAL.</b>																			
Tabes dorsalis . . . . .	2	...	...	...	...	...	2	...	...	...	...	...	...	...	1	...	...	1	...
Diarrhœa . . . . .	3	...	...	...	1	...	2	...	...	...	...	...	...	...	...	...	...	3	...
Lumbago . . . . .	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...
General paralysis . . . . .	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Acromegaly . . . . .	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
Hysteria . . . . .	2	3	...	...	1	2	2	...	...	...	...	...	...	...	1	1	...	1	2



according to authorised *Nomenclature*—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12		C.	R.	U.	D.	
...	1	...	...	...	...	...	...	...	1	...	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	...	
1	1	...	...	...	...	...	...	...	2	...	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Previous operation for genu valgum.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	
1	2	1	1	...	...	...	...	...	4	...	1	...	...	Left 2.
...	1	...	...	...	...	...	...	...	...	...	...	1	...	Fatal: broncho-pneumonia.
...	1	2	2	2	...	...	...	...	3	1	2	1	...	Left 3. Fatal: emaciation.
...	3	3	5	2	...	...	...	...	2	2	7	2	...	Readmissions 3. Fatal: marasmus and acute otitis with thrombosis of lateral sinus.
...	2	1	8	...	...	...	...	...	5	1	4	1	...	Fatal: hæmorrhage after operation.
...	1	...	...	...	...	...	...	...	1	...	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Double.
...	3	...	3	...	...	...	...	...	...	3	3	...	...	Anterior 2.
1	2	3	3	1	...	...	...	...	1	...	3	6	...	Meningo-myelocoele 7, myelocoele 1, meningocele 1, cerebral tumour 1. Sacral 5, lumbar 1, dorsal 1, lumbo-sacral 3.
...	...	1	...	1	...	...	...	...	1	1	...	...	...	Double 1.
5	1	...	...	...	...	...	...	...	1	1	...	4	...	Readmission 1.
...	1	...	...	1	...	...	...	...	1	...	1	...	...	
...	...	1	...	...	...	...	...	...	...	...	1	...	...	Deflected to ulnar side.
1	...	...	...	...	...	...	...	...	...	...	...	1	...	
...	...	...	1	...	...	...	...	...	...	...	1	...	...	
...	...	...	...	1	...	...	...	...	...	...	1	...	...	
...	...	1	...	...	...	...	...	...	...	...	...	1	...	
...	...	1	...	...	...	...	...	...	...	...	...	1	...	
...	...	1	...	...	...	...	...	...	...	...	...	1	...	Heart herniated into ventral sac.
...	...	1	1	...	...	...	...	...	...	...	2	...	...	To Medical side.
...	2	...	...	1	...	...	...	...	...	1	2	...	...	To Medical side 1.
1	...	...	...	...	...	...	...	...	...	...	1	...	...	
...	1	...	...	...	...	...	...	...	...	...	1	...	...	
...	1	...	...	...	...	...	...	...	...	...	1	...	...	To Medical side 1.
1	1	1	2	...	...	...	...	...	1	1	3	...	...	To Medical side 1.



according to authorised Nomenclature—continued.

Duration of residence.										Result.			Remarks.
Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.	
3	...	1	...	...	...	...	...	...	...	3	1	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	
1	...	...	...	...	...	...	...	...	...	1	...	...	To Medical side.
...	...	...	...	1	...	...	...	...	...	1	...	...	To Medical side. Nature doubtful.
...	1	...	...	...	...	...	...	...	...	1	...	...	
...	1	1	...	...	...	...	...	...	...	2	...	...	
...	...	2	...	...	...	...	...	...	...	1	1	...	
...	1	...	...	...	...	...	...	...	...	...	1	...	
...	1	...	...	...	...	...	...	...	...	...	1	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	
1	...	...	...	...	...	...	...	...	...	...	1	...	
...	1	...	...	...	...	...	...	...	...	...	1	...	
...	...	2	...	...	...	...	...	...	...	...	1	1	To Medical side 1. Fatal: embolism of mid-central artery.
...	...	1	...	...	...	...	...	...	...	...	1	...	To Medical side.
...	1	...	...	...	...	...	...	...	...	...	1	...	To Medical side.
...	1	1	...	...	...	...	...	...	...	1	1	...	
...	...	...	...	...	...	...	...	...	33	15	2	...	
...	...	...	...	...	...	...	...	...	...	3	1	...	
										1733	559	224	159

TABLE II.—*Abstract, showing Injuries, &c., in*

INJURIES.	Sex.		Age.								Duration before admission.					
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Hrs. 1-6	Hrs. 7-12	Hrs. 13-24	Dys. 1-3	Dys. 3-6	Dys. +6
<b>GENERAL INJURIES.</b>																
Burns . . . . .	18	30	25	5	9	3	4	1	...	...	47	...	...	1	...	...
Scalds . . . . .	11	23	23	5	3	1	...	1	1	...	31	...	...	2	...	1
<b>LOCAL INJURIES.</b>																
Wounds and contusions of scalp	19	8	2	3	6	2	3	5	1	5	22	...	1	1	2	1
Cephalhæmatoma . . . . .	...	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...
Wounds of face . . . . .	7	2	1	2	1	1	...	1	2	1	8	...	...	...	...	1
Wound of palate . . . . .	...	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...
Hæmatoma of cheek . . . . .	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1
Dislocation of inferior maxilla	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
Concussion . . . . .	80	13	18	17	14	17	9	13	3	2	91	...	...	...	1	1
<i>Fractures of vault of skull—</i>																
Simple . . . . .	2	1	1	...	...	...	...	2	...	...	3	...	...	...	...	...
Compound . . . . .	4	2	...	1	1	1	1	1	...	1	5	...	...	1	...	...
Simple depressed . . . . .	2	...	1	1	...	...	...	...	...	...	2	...	...	...	...	...
Compound depressed . . . . .	4	1	...	1	2	1	1	...	...	...	5	...	...	...	...	...
<i>Fractures of base . . . . .</i>	19	2	...	1	3	4	3	3	1	5	21	...	...	...	...	...
<i>Fractures of base and vertex:</i>																
Simple . . . . .	5	...	1	...	...	2	1	...	...	1	5	...	...	...	...	...
Compound . . . . .	1	1	...	...	...	...	1	1	...	...	2	...	...	...	...	...
Compound depressed . . . . .	3	...	...	1	...	1	1	...	...	...	3	...	...	...	...	...
<i>Fractures of face bones—</i>																
Superior maxilla . . . . .	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...
Inferior maxilla . . . . .	3	...	...	...	...	1	...	1	...	1	3	...	...	...	...	...
Nasal bones . . . . .	4	...	...	...	...	1	...	1	1	1	4	...	...	...	...	...
<i>Injuries of neck—</i>																
Contusion . . . . .	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
Hæmatoma . . . . .	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...
Sprain . . . . .	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...
Cut throat . . . . .	8	1	...	...	...	1	3	3	1	1	9	...	...	...	...	...
<i>Injuries of thorax—</i>																
Contusions . . . . .	4	1	...	1	1	...	1	2	...	...	4	...	...	1	...	...
Fractured ribs . . . . .	12	3	...	4	2	2	1	2	1	3	15	...	...	...	...	...
Fractured sternum . . . . .	2	...	...	...	...	...	...	1	1	...	2	...	...	...	...	...



*Classes, according to authorised Nomenclature.*

Duration of residence.										Result.				Remarks.
ys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12		C.	R.	U.	D.	
25	11	3	7	2	...	...	...	...	22	...	...	...	26	
9	10	10	4	1	...	...	...	...	23	...	...	...	11	
16	8	2	1	...	...	...	...	...	26	1	...	...	...	Concussion 1; base bone 3. Epilepsy 1.
...	1	...	...	...	...	...	...	...	1	...	...	...	...	
4	4	1	...	...	...	...	...	...	9	...	...	...	...	Rupture of globe of eye 1; excision of eye 1.
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Foreign body in temporal region 1.
...	...	...	1	...	...	...	...	...	...	...	...	...	1	
1	...	...	...	...	...	...	...	...	1	...	...	...	...	
45	40	5	3	...	...	...	...	...	89	1	...	...	3	Fractured sternum 1, fractured ribs 1; transferred to Medical 1.
3	...	...	...	...	...	...	...	...	2	...	...	...	1	Frontal with emphysema 1.
1	3	2	...	...	...	...	...	...	6	...	...	...	...	Linear fractures. All did well.
...	2	...	...	...	...	...	...	...	2	...	...	...	...	
...	1	3	1	...	...	...	...	...	5	...	...	...	...	
4	6	8	3	...	...	...	...	...	16	1	...	...	4	Colles's fracture 1.
5	...	...	...	...	...	...	...	...	...	...	...	...	5	Compound fracture of ant. superior spine 1, fractured clavicle 1, fractured ribs 1.
1	1	...	...	...	...	...	...	...	...	...	...	...	2	
1	...	1	1	...	...	...	...	...	1	1	...	...	1	Cerebral abscess 1.
1	...	...	...	...	...	...	...	...	1	...	...	...	...	
...	2	1	...	...	...	...	...	...	2	...	...	...	1	Vertical ramus 1; both angles and symphysis, with laceration of soft tissues by direct violence, cellulitis of neck, death 1; by first molar 1.
1	2	...	1	...	...	...	...	...	4	...	...	...	...	Excessive recurrent hæmorrhage 1.
1	...	...	...	...	...	...	...	...	1	...	...	...	...	
1	...	...	...	...	...	...	...	...	1	...	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	...	
3	4	1	1	...	...	...	...	...	6	...	...	...	3	
3	2	...	...	...	...	...	...	...	4	...	...	...	1	Ruptured lung 1.
6	8	1	...	...	...	...	...	...	14	...	...	...	1	Compound 1; compound fracture of clavicle 1. See also "Ruptured liver, spleen, kidney."
...	2	...	...	...	...	...	...	...	2	...	...	...	..	Caused by a kick 1, by a fall 1. See also "Concussion."



## Classes, according to authorised Nomenclature—continued.

Duration of residence.										Result.				Remarks.
Dys. 1-1	Dys 5-13	Wks 2-4	Mts 1-2	Mts 2-4	Mts 4-6	Mts 6-9	Mts. 9-12	Mts. +12		C.	R.	U.	D.	
...	...	1	...	...	...	...	...	...	1	...	...	...	...	
11 3	1 ...	1 ...	...	1	1	...	...	1	13	1	1	1	3	
10 ...	4 ...	...	...	1	...	...	...	...	14	...	...	...	...	Traumatic colic 1.
1 ...	...	...	...	...	...	...	...	...	1	...	...	...	1	
1 ...	1	2	...	...	...	...	...	...	3	...	...	...	1	Fractured ribs 1.
3 ...	...	...	...	...	...	...	...	...	...	...	...	...	3	Fractured ribs and ruptured lung 1; rup- tured kidney 1.
2 ...	...	...	...	...	...	...	...	...	...	...	...	...	2	Fractured ribs 1; contusion of gut and mesentery 1; ruptured lung 1.
2 ...	...	...	...	...	...	...	...	...	...	...	...	...	2	
1 ...	...	...	...	...	...	...	...	...	...	...	...	...	1	
...	...	1	...	...	...	...	...	...	1	...	...	...	...	
1 ...	...	...	...	...	...	...	...	...	...	...	...	...	1	
1 ...	1	...	...	...	...	...	...	...	2	...	...	...	...	
1 ...	1	...	...	...	...	...	...	...	2	...	...	...	...	
...	...	...	...	...	...	...	...	...	1	...	...	...	...	
...	...	1	...	1	...	...	...	...	2	...	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	...	
...	...	...	3	...	...	...	...	...	1	...	...	...	...	See also "Simple fractures of base and vertex."
...	...	...	...	...	...	...	...	...	3	...	...	...	...	
1 ...	...	1	...	...	...	...	...	...	2	...	...	...	...	Grafted.
...	...	...	1	...	...	...	...	...	1	...	...	...	...	
5 ...	9	6	2	...	...	...	...	...	22	...	...	...	...	
3 ...	2	...	...	...	...	...	...	...	5	...	...	...	...	
...	2	1	1	...	...	...	...	...	2	1	1	...	...	Old case 2. Ulnar divided also 1.
...	1	2	...	...	...	...	...	...	2	1	...	...	...	Old case 1. Radial and internal cutaneous nerve divided 1. See also "Nervous."
...	1	...	...	...	...	...	...	...	1	...	...	...	...	Immediate suture 1.
3 ...	3	...	...	...	...	...	...	...	4	...	2	...	...	
...	1	1	2	...	...	...	...	...	1	3	...	...	...	Readmission 1.
...	1	...	...	...	...	...	...	...	1	...	...	...	...	Head forwards; duration 3 weeks. Excision.

TABLE II.—Abstract, showing Injuries, &amp;c., in

INJURIES.	Sex.		Age.								Duration before admission.					
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	Hrs. 1-6	Hrs. 7-12	Hrs. 13-24	Dys. 1-3	Dys. 3-6	Dys. +6
<i>LOCAL INJURIES—continued.</i>																
<i>Injuries of upper extremity—continued.</i>																
Dislocation of metacarpus.	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
„ of fingers	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...
Fractures—																
Scapula . . . . .	1	1	...	...	...	1	1	...	...	...	2	...	...	...	...	...
Humerus . . . . .	7	1	...	1	3	1	...	...	2	1	8	...	...	...	...	...
Do., comminuted . . .	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...
Do., compound . . . .	3	...	...	...	...	2	...	...	1	3	...	...	...	...	...	...
Ulna . . . . .	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
Olecranon . . . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Do., compound . . . .	1	1	...	...	...	1	...	...	1	2	...	...	...	...	...	...
Radius and ulna, comp. .	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
Do., comp. comminuted	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...
Metacarpus . . . . .	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...
Do., comp. comminuted	2	...	...	...	...	1	1	...	...	...	2	...	...	...	...	...
<i>Injuries of lower extremity—</i>																
Contusions . . . . .	18	2	...	2	3	2	5	2	4	2	15	...	...	1	1	3
Rupture of ligamentum patellæ	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Rupture of popliteal artery and vein	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...
Wounds of thigh . . .	...	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...
„ of leg . . . . .	6	...	...	1	2	...	2	...	1	...	6	...	...	...	...	...
„ of foot . . . . .	3	...	1	1	...	1	...	...	...	...	2	...	...	1	...	...
Foreign body . . . . .	1	5	...	...	1	...	5	...	...	...	...	...	...	...	...	5
Sprain of hip . . . . .	...	2	...	...	1	...	1	...	...	...	1	...	...	...	...	1
„ of ankle . . . . .	1	1	...	1	...	...	...	...	...	1	1	...	...	1	...	...
Traumatic synovitis—																
Shoulder . . . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...
Knee . . . . .	10	2	...	1	3	3	...	1	2	2	12	...	...	...	...	...
Ankle . . . . .	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
Penetrating wound of knee	3	...	...	...	1	1	1	...	...	...	3	...	...	...	...	...
Fractures—																
Shaft of femur . . . .	56	13	12	22	6	4	2	10	6	7	68	...	...	...	1	...
Do., compound . . . .	5	...	...	1	...	2	...	1	1	...	5	...	...	...	...	...
Do., comp. comminuted	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Neck of femur . . . .	7	8	...	...	...	...	2	4	2	7	12	...	...	2	...	1
Patella . . . . .	21	5	...	...	1	8	7	5	4	1	22	...	...	...	...	3

*Classes, according to authorised Nomenclature—continued.*

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12		C.	R.	U.	D.	
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Compound fracture dislocation. Old case.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Excision of base.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	Compound.
1	...	...	1	...	...	...	...	...	...	2	...	...	...	Comminuted fracture of clavicle 1.
1	4	3	...	...	...	...	...	...	...	7	...	...	1	Fatal case: chronic renal.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Dislocation of radius and ulna backwards 1.
...	1	1	...	...	...	1	...	...	...	2	1	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Middle third.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Old case with fibrous union. Massage.
...	1	1	...	...	...	...	...	...	...	2	...	...	...	Good movement.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Wired in one case.
...	...	...	...	1	...	...	...	...	...	1	...	...	...	Middle third.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Amputation in lower third of arm.
...	2	...	...	...	...	...	...	...	...	2	...	...	...	
2	10	6	2	...	...	...	...	...	...	20	...	...	...	Suppurating hæmatoma 2.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Plaster splint.
1	...	...	...	...	...	...	...	...	...	...	...	...	1	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	
2	1	1	2	...	...	...	...	...	...	6	...	...	...	Bursa patellæ opened 1.
...	...	1	1	1	...	...	...	...	...	3	...	...	...	
...	4	1	1	...	...	...	...	...	...	4	2	...	...	
...	...	1	1	...	...	...	...	...	...	2	...	...	...	
1	1	...	...	...	...	...	...	...	...	2	...	...	...	
1	...	...	...	...	...	...	...	...	...	1	...	...	...	
2	6	4	...	...	...	...	...	...	...	11	1	...	...	Rupture of internal lateral ligament 1;
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Colles's fracture 1.
...	2	...	1	...	...	...	...	...	...	3	...	...	...	
4	24	13	20	5	2	...	1	...	...	63	2	...	4	Double 2. Fractured ribs 1; rupture of
...	...	...	...	...	...	...	...	...	...	...	...	...	...	popliteal artery 1.
2	...	1	2	...	...	...	...	...	...	3	...	...	2	Double 1. Compound fracture of tibia and
...	...	...	...	...	...	...	...	...	...	...	...	...	...	fibula 1.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	
1	1	3	7	3	...	...	...	...	...	11	3	...	1	
...	3	8	14	1	...	...	...	...	...	23	1	2	...	Compound comminuted 1.





*Classes, according to authorised Nomenclature—continued.*

Duration of residence.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks. 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12		C.	R.	U.	D.	
10	41	16	3	...	...	...	...	...	70	...	...	...	...	Fracture of opposite fibula 1.
1	3	6	3	2	...	...	...	...	11	...	...	...	1	Fracture of tibia of opposite 1. Emphyse- matous gangrene 1.
2	...	1	2	1	...	...	...	...	4	...	...	...	2	Compound comminuted fracture of tarsus and metatarsus 1.
7	12	1	...	...	...	...	...	...	20	...	...	...	...	
...	1	1	...	...	...	...	...	...	2	...	...	...	...	
7	18	...	...	...	...	...	...	...	25	...	...	...	...	Fractured vagina 1.
...	...	...	1	1	...	...	...	...	2	...	...	...	...	Double 1, compound 1, compound commi- nated 1.
...	1	...	1	...	...	...	...	...	2	...	...	...	...	Compound comminuted 1.
...	...	...	3	...	...	...	...	...	3	...	...	...	...	Compound 2, compound comminuted 1.
...	...	...	1	...	...	...	...	...	...	...	...	1	...	Comminuted fracture 17 weeks previously; wired. Necrosis. No union.
...	...	1	...	...	...	...	...	...	...	1	...	...	...	Previous compound fracture. Sequestro- tomy. Fibrous union.
...	2	...	...	...	...	...	...	...	1	1	...	...	...	Vicious union 1; previous compound frac- ture 1. Straightened 1; plaster-of-Paris splint 1. Interval: 2 months 1, doubt- ful 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Lower third; locking of elbow. Excision of projecting fragment.
1	...	...	...	...	...	...	...	...	1	...	...	...	...	Amputation of finger.
...	...	1	...	...	...	...	...	...	1	...	...	...	...	Amputation of finger.
1	...	1	1	1	...	...	...	...	2	...	1	...	...	
1	...	1	...	...	...	...	...	...	2	...	...	...	...	Compound fracture 3 months and 4 months previously. Refracture 1; straightened 1.
										655	23	8	86	
										1733	559	224	159	
										2388	582	232	245	
										3447				

TABLE III.—

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60
REMOVAL OF TUMOURS AND NEW GROWTHS.										
Amputation of breast . . . . .	...	10	...	...	..	...	3	5	1	1
„ „ and clearance of axilla . . . . .	...	37	...	...	...	1	5	10	12	9
Axillary glands . . . . .	...	1	...	...	...	...	1	...	...	...
Cervical glands . . . . .	...	1	...	...	...	...	...	...	...	1
Recurrent scirrhus of breast . . . . .	...	6	...	...	...	...	2	...	2	2
Carcinoma of antrum . . . . .	...	1	...	...	...	...	...	1	...	...
„ of kidney . . . . .	...	1	...	...	...	...	1	...	...	...
„ of testis . . . . .	...	1	...	...	...	...	1	...	...	...
„ of lachrymal gland . . . . .	...	2	...	...	...	...	2	...	...	...
„ of parotid . . . . .	...	1	...	...	...	...	...	1	...	...
„ of rectum . . . . .	3	3	...	...	...	1	2	1	1	1
„ of ascending colon . . . . .	3	...	...	...	...	2	...	1	...	...
„ of cæcum . . . . .	1	...	...	...	...	...	1	...	...	...
„ of breast . . . . .	...	1	...	...	...	1	...	...	...	...
„ of umbilicus . . . . .	...	1	...	...	...	...	...	1	...	...
„ of rectal glands . . . . .	...	1	...	...	...	1	...	...	...	...
Epithelioma of tongue . . . . .	15	1	...	...	...	...	1	1	6	8
„ „ recurrent . . . . .	1	...	...	...	...	...	...	...	...	1
„ of floor of mouth . . . . .	1	...	...	...	...	...	...	1	...	...
„ of lip . . . . .	9	...	...	...	...	...	...	...	4	5
„ of cheek . . . . .	1	1	...	...	...	...	...	...	...	2
„ of soft palate . . . . .	2	...	...	...	...	...	...	...	1	1
„ of alveolar border . . . . .	1	...	...	...	...	...	...	...	...	1
„ of penis . . . . .	3	...	...	...	...	...	...	1	1	1
„ „ recurrent . . . . .	2	...	...	...	...	...	...	...	2	...
„ of foot . . . . .	1	...	...	...	...	...	...	...	1	...
„ of leg . . . . .	1	...	...	...	...	...	...	1	...	...
„ of glands . . . . .	10	...	...	...	...	...	...	4	2	4
Rodent ulcer . . . . .	2	5	...	...	...	...	1	3	1	2
Sarcoma of lip . . . . .	1	...	...	...	...	...	...	...	1	...
„ of orbit . . . . .	1	...	...	...	1	...	...	...	...	...
„ of cheek . . . . .	2	...	...	...	...	...	1	...	1	...
„ of septum nasi . . . . .	1	...	...	...	...	...	...	1	...	...
„ of testis . . . . .	1	...	...	...	...	...	...	...	1	...
„ of ilium . . . . .	1	...	...	...	...	...	...	...	1	...
„ of metacarpal . . . . .	1	...	...	...	...	...	...	...	1	...
„ of femur . . . . .	1	...	...	...	...	...	...	1	...	...

*Surgical Operations.*

Duration of residence after operation.									Result.				Remarks.
rs.	Dys.	Wks	Mts.	Mts.	Mts.	Mts.	Mts.	Mts	C.	R.	U.	D.	
4	5-13	3-4	1-2	2-4	4-6	6-9	9-12	+12					
..	5	3	2	...	...	...	...	...	10	...	...	...	Scirrhus 5; myxo-adenoma with proliferating cysts 1; chronic interstitial mastitis 4.
1	5	23	8	...	...	...	...	...	35	...	...	2	Scirrhus 35; duct papilloma 1. Fatal cases: shock 1, erysipelas and pyæmia 1. See Special Table II.
...	...	1	...	...	...	...	...	...	1	...	...	...	Previous scirrhus carcinoma of breast.
...	...	1	...	...	...	...	...	...	1	...	...	...	Previous scirrhus carcinoma of breast.
...	1	3	2	...	...	...	...	...	6	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	Excision of upper jaw.
1	...	...	...	...	...	...	...	...	...	...	...	1	Abdominal nephrectomy.
...	...	1	...	...	...	...	...	...	...	1	...	...	Lumbar glands involved.
...	1	...	1	...	...	...	...	...	2	...	...	...	Same case, recurrence. Excised.
...	1	...	...	...	...	...	...	...	...	...	1	...	Operation abandoned.
...	...	3	3	...	...	...	...	...	5	...	1	...	Kraske's method 1; operation abandoned 1.
...	1	...	1	1	...	...	...	...	2	...	...	1	Excision of cæcum 2; circular enterorrhaphy over Allingham's button 2; colectomy and circular enterorrhaphy 1.
...	...	...	...	...	1	...	...	...	1	...	...	...	Lateral implantation of ilium into cæcum 1.
...	1	...	...	...	...	...	...	...	1	...	...	...	Duct carcinoma 1.
...	...	...	1	...	...	...	...	...	1	...	...	...	Origin unknown.
...	...	1	...	...	...	...	...	...	1	...	...	...	Previous excision of rectum 1.
...	4	9	8	...	...	...	...	...	14	...	...	2	Ligature of lingual 3; both linguals 1. Facial 1; external carotid 2. Fatal cases: gangrene of lung.
...	1	...	...	...	...	...	...	...	...	...	...	1	Floor of mouth involved. Removal of portion of jaw.
...	1	...	...	...	...	...	...	...	1	...	...	...	
1	5	3	...	...	...	...	...	...	9	...	...	...	Lower in all.
1	...	1	...	...	...	...	...	...	2	...	...	...	
...	...	2	...	...	...	...	...	...	1	...	1	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	Jaw involved 1.
1	...	2	...	...	...	...	...	...	2	...	...	1	Excision of growth 1; amputation of penis 2.
...	1	...	1	...	...	...	...	...	2	...	...	...	Amputation of penis 1; previous excision of growth only 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	Syme's amputation.
...	...	1	...	...	...	...	...	...	1	...	...	...	Amputation of femur through condyles.
1	9	...	...	...	...	...	...	...	7	...	1	2	Cervical 9, groin 1. Secondary in all.
3	1	1	2	...	...	...	...	...	5	1	1	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	Secondary growths in skin, spindle-celled.
...	...	1	...	...	...	...	...	...	...	1	...	...	Traumatic round-celled.
...	1	1	...	...	...	...	...	...	2	...	...	...	Melanotic 1; fibro-sarcoma encapsuled 1.
...	1	...	...	...	...	...	...	...	1	...	...	...	Round-celled.
...	...	1	...	...	...	...	...	...	1	...	...	...	Castration. Large spindle-celled.
...	...	1	...	...	...	...	...	...	...	1	...	...	Partial removal. Myxo-chondrosarcoma.
...	...	1	...	...	...	...	...	...	1	...	...	...	Thumb. Chondrosarcoma. Amputation at carpo-metacarpal joint.
...	...	1	...	...	...	...	...	...	1	...	...	...	Spindle-celled. Amputation of thigh in upper third 1.

TABLE III.—Surgical

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60
REMOVAL OF TUMOURS AND NEW GROWTHS										
—continued.										
Sarcoma of thigh . . . . .	...	1	...	...	...	...	...	1	...	...
„ of popliteal, recurrent . . . .	...	1	...	...	1	...	...	...	...	...
„ of tibia . . . . .	2	1	...	...	2	1	...	...	...	...
Lipoma . . . . .	7	10	...	...	3	2	3	5	3	1
Papilloma . . . . .	1	1	...	...	1	...	...	...	...	1
Polypi . . . . .	7	15	1	4	6	5	5	...	1	...
Adenoids . . . . .	9	15	...	4	16	4	...	...	...	...
Enchondroma . . . . .	2	...	...	...	1	1	...	...	...	...
Exostosis . . . . .	3	5	...	...	7	1	...	...	...	...
Nævi, excision . . . . .	...	9	6	...	1	1	1	...	...	...
„ electrolysis . . . . .	...	2	2	...	...	...	...	...	...	...
Fibroma . . . . .	4	2	...	...	...	3	2	...	...	1
Fibrous epulis . . . . .	...	4	...	...	3	...	...	1	...	...
Fibro-adenoma . . . . .	...	11	...	...	1	5	5	...	...	...
Fibro-myxoma . . . . .	...	1	...	...	...	...	...	...	1	...
Adenoma . . . . .	...	1	...	...	...	...	1	...	...	...
Plexiform neuroma . . . . .	...	1	...	...	...	1	...	...	...	...
Fibro-myoma . . . . .	...	2	...	...	...	...	1	1	...	...
Parotid tumour . . . . .	1	2	...	...	...	...	2	1	...	...
Pigmented mole . . . . .	1	3	...	1	2	...	...	...	...	1
Granuloma . . . . .	...	3	...	...	...	3	...	...	...	...
Submaxillary tumour . . . . .	...	2	...	...	1	1	...	...	...	...
Tonsils . . . . .	3	...	1	...	1	1	...	...	...	...
Myxoma of vocal cord . . . . .	1	...	...	...	...	...	...	1	...	...
Sacro-coccygeal tumour . . . . .	1	...	1	...	...	...	...	...	...	...
„ „ tapping . . . . .	2	...	2	...	...	...	...	...	...	...
Cysts, dermoid . . . . .	6	6	...	...	3	5	1	2	...	...
„ thyro-lingual . . . . .	1	...	...	...	1	...	...	...	...	...
„ multilocular, of neck . . . . .	1	1	1	1	...	...	...	...	...	...
„ appendicular . . . . .	1	1	...	...	1	...	...	1	...	...
„ hydatid . . . . .	2	4	...	...	...	2	3	...	...	1
„ breast . . . . .	...	6	...	...	...	...	2	2	1	1
„ sebaceous . . . . .	2	2	...	...	1	...	1	1	...	1
„ serous . . . . .	1	1	1	...	...	1	...	...	...	...



## Operations—continued.

Duration of residence after operation.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12		C.	R.	U.	D.	
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Intra-muscular, round-celled. Amputation at hip.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Fibro-sarcoma. Resection and suture of popliteal nerve 1.
1	...	1	...	...	1	...	...	...	1	1	...	1	...	Spindle-celled, and amputation of thigh 1; myeloid, and resection of upper end of tibia, and fatal 1; cavernous sarcoma, and amputation through knee 1.
5	8	4	...	...	...	...	...	...	17	...	...	...	...	Groin 1, subfascial 1.
2	...	...	...	...	...	...	...	...	2	...	...	...	...	
14	6	1	1	...	...	...	...	...	20	2	...	...	...	Nasal 13, rectal 7, anal 1. Frontal empyema 1.
18	5	1	...	...	...	...	...	...	24	...	...	...	...	Tonsils 3.
1	1	...	...	...	...	...	...	...	2	...	...	...	...	Finger 1, nasal septum 1.
1	6	1	...	...	...	...	...	...	8	...	...	...	...	Metacarpal 1, subungual 1, fibular 1, supra-condyloid process of humerus 1, septum nasi 1, frontal 1, tibia 1.
1	5	2	1	...	...	...	...	...	8	...	...	...	1	
...	...	1	1	...	...	...	...	...	...	1	...	...	1	
2	...	3	1	...	...	...	...	...	6	...	...	...	...	Inguinal canal 1, intra-muscular, of belly wall 1, buttock 1, neck 1, thigh 1.
3	1	...	...	...	...	...	...	...	4	...	...	...	...	
...	6	5	...	...	...	...	...	...	11	...	...	...	...	Breast 11. Proliferating cyst 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	...	Palate 1.
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Superior maxilla.
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Thigh.
1	...	1	...	...	...	...	...	...	1	...	...	...	1	Extra-peritoneal hysterectomy 1, intra-peritoneal 1. Fatal: tubal nephritis.
1	2	...	...	...	...	...	...	...	3	...	...	...	...	
1	...	3	...	...	...	...	...	...	4	...	...	...	...	Grafted 1.
2	1	...	...	...	...	...	...	...	3	...	...	...	...	
...	2	...	...	...	...	...	...	...	2	...	...	...	...	
...	2	1	...	...	...	...	...	...	3	...	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	...	Thyrotomy and excision of cord.
...	...	...	1	...	...	...	...	...	1	...	...	...	...	
...	...	...	2	...	...	...	...	...	2	...	...	...	...	Same case as last.
2	8	2	...	...	...	...	...	...	12	...	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	...	
...	1	1	...	...	...	...	...	...	2	...	...	...	...	
1	1	...	...	...	...	...	...	...	2	...	...	...	...	
...	1	...	3	2	...	...	...	...	6	...	...	...	...	Thigh 1, abdomen 4, pelvis 1. Incision and drainage 6.
...	4	2	...	...	...	...	...	...	6	...	...	...	...	Proliferating 1, multiple 2, chronic interstitial mastitis 3.
2	1	1	...	...	...	...	...	...	4	...	...	...	...	Thorax 1.
...	2	...	...	...	...	...	...	...	2	...	...	...	...	Nature? 2.

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60
REMOVAL OF TUMOURS AND NEW GROWTHS										
—continued.										
Cysts, Marrant Baker's . . . . .	2	...	...	...	...	1	...	...	...	1
„ broad ligament . . . . .	...	2	...	...	...	...	2	...	...	...
„ ovarian . . . . .	...	10	...	...	1	2	...	2	2	3
„ „ suppurating . . . . .	...	2	...	...	...	...	2	...	...	...
DIGESTIVE SYSTEM.										
Dilated stomach . . . . .	2	...	...	...	...	1	...	...	1	...
Cancerum oris . . . . .	...	2	2	...	...	...	...	...	...	...
Granular pharyngitis . . . . .	...	1	...	...	...	1	...	...	...	...
Salivary calculus . . . . .	1	...	...	...	...	...	1	...	...	...
Herniotomy—										
Inguinal . . . . .	5	...	...	...	1	...	3	1	...	...
Femoral . . . . .	1	1	...	...	...	...	...	...	1	1
Herniotomy and radical cure—										
Inguinal . . . . .	10	1	...	...	...	1	3	4	1	2
Femoral . . . . .	4	19	...	...	...	...	...	7	7	9
Umbilical . . . . .	...	6	...	...	...	...	1	...	4	1
Obturator . . . . .	2	...	...	...	...	...	...	...	...	2
Radical cure—										
Inguinal . . . . .	143	14	7	11	44	52	18	21	5	...
Femoral . . . . .	2	15	...	...	1	3	7	4	2	...
Umbilical . . . . .	1	1	...	...	...	1	1	...	...	...
Ventral . . . . .	1	8	...	1	...	2	1	4	1	...
Incision of appendicitic abscess . . . . .	6	4	...	1	3	1	2	3	...	...
General peritonitis from appendicitis . . . . .	11	...	...	1	2	5	1	1	...	1
Appendectomy . . . . .	9	6	...	1	3	6	4	1	...	...
Intussusception . . . . .	5	2	6	...	...	...	...	1	...	...
Volvulus of cæcum . . . . .	...	1	...	...	...	1	...	...	...	...
Strangulation by band . . . . .	2	...	...	...	1	...	...	...	...	1
Matting of small gut . . . . .	...	2	...	...	...	...	1	1	...	...
Suture of perforating gastric ulcer . . . . .	...	4	...	...	1	2	1	...	...	...
Drainage of lesser sac . . . . .	1	...	...	...	...	1	...	...	...	...
Tuberculous peritonitis . . . . .	3	5	...	4	2	2	...	...	...	...
Fæcal fistula . . . . .	3	...	...	...	...	...	2	...	1	...

## Operations—continued.

Duration of residence after operation.									Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.	
...	...	...	2	...	...	...	...	...	1	1	...	...	Hip communicating with joint 1, knee 1.
...	...	2	...	...	...	...	...	...	1	1	...	...	Incision and drainage 1, partial excision 1.
...	...	...	...	...	...	...	...	...	...	...	...	...	Nature doubtful 2.
...	1	4	5	...	...	...	...	...	8	...	...	2	Fatal cases: septic peritonitis 1, cause? 1.
...	...	1	...	1	...	...	...	...	1	...	...	1	Papilliferous cyst of opposite ovary 1.
...	...	...	...	...	...	...	...	...	...	...	...	...	Readmission 1. Incision and drainage.
...	...	...	...	...	...	...	...	...	...	...	...	...	Intra-peritoneal abscess.
...	...	...	1	1	...	...	...	...	2	...	...	...	Loretto's operation 1; adhesions about pylorus separated 1.
2	...	...	...	...	...	...	...	...	...	...	...	2	Same case. Excision of gangrene.
...	1	...	...	...	...	...	...	...	1	...	...	...	Cautery.
...	1	...	...	...	...	...	...	...	1	...	...	...	Submaxillary gland excised.
1	...	4	...	...	...	...	...	...	4	...	...	1	
1	...	...	...	...	1	...	...	...	1	...	...	1	Fæcal fistula 1. <i>Vide</i> 'Lancet,' 1896. Fatal case: chronic interstitial nephritis.
...	...	11	...	...	...	...	...	...	11	...	...	...	
4	1	12	6	...	...	...	...	...	18	...	...	5	
1	...	2	3	...	...	...	...	...	5	...	...	1	
...	...	1	1	...	...	...	...	...	2	...	...	...	Double 1. <i>Vide</i> 'Lancet,' April 4, 1896.
2	27	107	21	...	...	...	...	...	155	...	...	2	Fatal: septic peritonitis 1, septicæmia, 1. <i>Vide</i> Special Table III.
...	2	10	5	...	...	...	...	...	17	...	...	...	
...	1	1	...	...	...	...	...	...	1	...	...	1	Fatal: septic peritonitis.
1	2	3	2	1	...	...	...	...	8	...	...	1	Fatal: septic peritonitis. Appendectomy.
1	...	3	5	1	...	...	...	...	9	...	...	1	Fatal: general septic peritonitis. Empyema 1; residual abscess 1. Readmission 1.
8	2	...	1	...	...	...	...	...	1	...	...	10	Irrigation 10. <i>Vide</i> 'Brit. Med. Journ.,' Dec. 12, 1896, for case that recovered.
...	...	10	5	...	...	...	...	...	15	...	...	...	
5	...	2	...	...	...	...	...	...	2	...	...	5	Cæliotomy and reduction 3; cæliotomy and gut found reduced 3; small gut intussusception, gangrenous, resection and enterorrhaphy 1.
1	...	...	...	...	...	...	...	...	...	...	...	1	Gut incised, sutured, and replaced.
1	1	...	...	...	...	...	...	...	...	...	...	2	Meckel's diverticulum 1; peritoneal band 1.
...	1	...	1	...	...	...	...	...	1	...	...	1	Previous hysterectomy 1; separation of adhesions 2.
2	...	...	2	...	...	...	...	...	2	...	...	2	Anterior surface in all.
...	...	...	...	1	...	...	...	...	1	...	...	...	Rupture of pancreas.
...	...	1	5	2	...	...	...	...	6	1	...	1	Irrigation of abdomen 6; evacuation of fluid 1.
...	...	...	1	2	...	...	...	...	3	...	...	...	Previous strangulation of femoral hernia 1.
...	...	...	...	...	...	...	...	...	...	...	...	...	<i>Vide</i> 'St. Thomas's Hosp. Reps.,' 1895.

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60
<b>DIGESTIVE SYSTEM—continued.</b>										
Cholelithotomy . . . . .	2	6	...	...	...	1	3	2	2	...
Biliary fistula . . . . .	...	1	...	...	...	...	...	...	...	1
Subdiaphragmatic abscess . . . . .	...	1	...	...	...	1	...	...	...	...
Suture of ruptured mesentery . . . . .	1	...	...	...	...	...	...	...	1	...
„ „ small gut . . . . .	1	...	...	...	...	...	...	1	...	...
Splenectomy . . . . .	1	...	...	...	...	1	...	...	...	...
Ruptured liver . . . . .	1	...	...	...	...	1	...	...	...	...
Lateral anastomosis of small gut . . . . .	...	1	...	...	...	1	...	...	...	...
„ „ of large gut . . . . .	...	1	...	...	...	...	...	...	1	...
Cœliotomy, exploratory . . . . .	10	14	...	1	5	5	8	3	2	...
Gastrostomy . . . . .	2	1	...	...	...	1	...	...	2	...
Right inguinal colotomy . . . . .	...	1	...	...	...	...	...	...	1	...
Left inguinal colotomy . . . . .	4	9	1	...	...	1	2	3	4	2
Right lumbar colotomy . . . . .	1	...	...	...	...	...	...	...	...	1
Median colotomy . . . . .	1	...	1	...	...	...	...	...	...	...
Fistula in ano . . . . .	15	10	...	...	1	8	9	4	2	1
Hæmorrhoids, Whitehead . . . . .	16	8	...	...	2	3	11	6	1	1
„ „ ligation and excision . . . . .	7	3	...	...	...	1	3	4	2	...
„ „ clamp and cautery . . . . .	1	...	...	...	...	...	...	1	...	...
Proctotomy . . . . .	1	4	...	...	...	...	3	2	...	...
Excision of organised syphilides . . . . .	...	2	...	...	...	...	1	1	...	...
„ „ of stricture of rectum . . . . .	...	1	...	...	...	...	...	...	...	1
Fissure in ano . . . . .	1	2	...	...	...	1	1	1	...	...
Suture of sphincter . . . . .	...	1	...	...	...	...	...	1	...	...
Ulcer of rectum, simple . . . . .	...	1	...	...	...	...	1	...	...	...
<b>GENITO-URINARY SYSTEM—</b>										
Circumcision . . . . .	14	...	7	...	3	1	1	1	1	...
Paraphimosis . . . . .	2	...	...	...	...	...	1	...	...	1
Urethral fistula . . . . .	1	...	...	...	...	...	1	...	...	...

## Operations—continued.

Duration of residence after operation.										Result.				Remarks.
Dys.	Dys.	Wks.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
1-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12						
...	...	3	5	...	...	...	...	...	7	...	...	1	...	Stones found only after death 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	...	Plastic.
...	...	1	...	...	...	...	...	...	1	...	...	...	...	Perisplenic. Cause?
1	...	...	...	...	...	...	...	...	...	...	...	1	...	Multiple tears.
1	...	...	...	...	...	...	...	...	...	...	...	1	...	Incomplete.
1	...	...	...	...	...	...	...	...	...	...	...	1	...	Ruptured spleen and lung.
1	...	...	...	...	...	...	...	...	...	...	...	1	...	Rent packed with gauze.
...	...	1	...	...	...	...	...	...	1	...	...	...	...	Simple stricture; by suture.
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Carcinoma of transverse colon; by Murphy's button.
2	2	11	9	...	...	...	...	...	8	3	9	4	...	Carcinoma of abdomen 2, of stomach 1, of pylorus 1, of ovary 1. For obstruction after strangulated hernia 1; for retro-peritoneal sarcoma 1; for multiple tumours of liver 1; for passage of blood and mucus 2; for diarrhoea 1; pelvic peritonitis 1; for contusion of intestine and signs of peritonitis 1; for supposed ruptured bladder 1; for exploration of appendix 1. Fatal cases: carcinoma in pelvis 1; septic peritonitis after ovariectomy, 1; blood in peritoneum, strangulation by band later, 1; salpingitis and intra-abdominal abscess 1.
...	1	...	2	...	...	...	...	...	1	1	...	1	...	Carcinoma of œsophagus 2; fibrous stricture of œsophagus 1; through rectus 2, Kocher's operation 1.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Lateral opening 1.
3	6	2	2	...	...	...	...	...	...	7	...	6	...	Ulcerative colitis 1; syphilitic stricture of rectum 1; imperforate rectum 1; obstruction 1.
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Carcinoma of rectum.
1	...	...	...	...	...	...	...	...	...	...	...	1	...	Imperforate anus 1.
2	14	7	...	1	1	...	...	...	22	1	2	...	...	Tuberculous ulceration of rectum 1.
...	9	14	1	...	...	...	...	...	24	...	...	...	...	
1	5	4	...	...	...	...	...	...	10	...	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	...	
...	2	2	1	...	...	...	...	...	...	5	...	...	...	Previous fistula 1; syphilitic stricture 4.
...	...	2	...	...	...	...	...	...	...	2	...	...	...	Anal 2.
...	...	1	...	...	...	...	...	...	1	...	...	...	...	Previous excision of rectum.
2	1	...	...	...	...	...	...	...	3	...	...	...	...	Cautery 2, division 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	...	Previous operation for fistula.
...	...	1	...	...	...	...	...	...	1	...	...	...	...	Excision. Glycosuria.
2	9	3	...	...	...	...	...	...	14	...	...	...	...	
...	1	1	...	...	...	...	...	...	2	...	...	...	...	Incision.
...	...	1	...	...	...	...	...	...	1	...	...	...	...	Plastic.





*Operations—continued.*

Duration of residence after operation.									Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.	
...	...	...	1	...	...	...	...	...	1	...	...	...	Ruptured urethra 1.
...	...	...	...	1	...	...	...	...	1	...	...	...	Ruptured urethra 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	...	4	...	...	...	...	...	4	...	...	...	
...	2	...	...	...	...	...	...	...	2	...	...	...	
...	...	2	2	...	...	...	...	...	4	...	...	...	Wheelhouse 2; stricture after ruptured urethra 1.
1	...	2	1	...	...	...	...	...	2	...	...	2	
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	Through perinæum.
...	...	...	...	1	...	...	...	...	1	...	...	...	Double, for salpingitis.
2	...	...	...	2	...	...	...	...	1	1	...	2	Enlarged prostate 3; tuberculous bladder 1.
...	2	...	...	...	...	...	...	...	...	1	...	1	Fatal case: pelvic peritonitis and cellulitis.
...	...	...	7	...	...	...	...	...	7	...	...	...	
...	...	...	2	1	...	...	...	...	2	1	...	...	Nephralgia 2; pyonephrosis and diabetes 1.
1	1	4	7	...	...	...	...	...	11	1	...	1	Fatal case: recurrent hæmorrhage, cause ? ? malignant of intestine also 1.
...	...	...	1	...	...	...	...	...	1	...	...	...	Hydronephrosis.
...	...	...	1	...	1	...	...	...	2	...	...	...	Traumatic 2.
...	...	...	1	...	...	...	...	...	1	...	...	...	Traumatic 1.
1	...	1	...	...	...	...	...	...	1	...	...	1	
...	...	...	1	...	...	...	...	...	...	...	...	1	Fatal: granular kidneys and cystitis.
1	...	...	...	...	...	...	...	...	...	...	...	1	Intense cystitis.
...	1	...	...	...	...	...	...	...	1	...	...	...	Perinæal section.
1	...	...	...	...	...	...	...	...	1	...	...	...	Hair-pin.
...	...	7	...	...	...	...	...	...	7	...	...	...	Double 2, suture of ring 3.
...	1	12	...	...	...	...	...	...	12	1	...	...	
...	4	1	...	...	...	...	...	...	...	5	...	...	
...	6	6	...	...	...	...	...	...	12	...	...	...	
1	3	...	...	...	...	...	...	...	4	...	...	...	Carbolic 3.
...	2	1	...	...	...	...	...	...	3	...	...	...	
...	5	1	...	...	...	...	...	...	6	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	Omentum plugged the neck.
...	...	1	...	...	...	...	...	...	1	...	...	...	
1	...	1	...	...	...	...	...	...	2	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	Small isolated nodule of breast tissue.
...	...	1	...	1	...	...	...	...	...	2	...	...	Hypertrophy of breasts. Same case.
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	Hæmorrhage from abscess of pharynx.
...	1	...	...	...	...	...	...	...	1	...	...	...	Hæmorrhage from excised tonsil.
...	...	...	2	...	1	...	...	...	2	...	...	1	1st stage 2; 2nd stage 1. Subclavian aneu-
...	...	1	1	...	...	...	...	...	1	...	...	1	rism, 3rd stage, 3. Double ligature 1.
...	...	...	...	...	...	...	...	...	...	...	...	...	3rd stage 2. Subclavian aneurysm, 3rd stage, 2.

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60
<b>VASCULAR SYSTEM—continued.</b>										
Ligation of internal mammary artery . . .	1	...	...	...	...	...	...	...	1	...
„ of radial artery . . .	2	...	...	...	...	2	...	...	...	...
„ of superficial and deep femoral artery . . .	1	...	...	...	...	...	1	...	...	...
„ of superficial femoral artery . . .	1	...	...	...	...	...	1	...	...	...
„ of popliteal artery . . .	1	...	...	...	...	1	...	...	...	...
„ of internal jugular vein . . .	1	4	...	2	2	1	...	...	...	...
Excision of varicose veins . . .	44	15	...	...	16	30	8	3	2	...
„ of varicocele . . .	57	...	...	...	32	24	1	...	...	...
Subcutaneous ligature of varicocele . . .	12	...	...	...	7	4	1	...	...	...
<b>LYMPHATIC SYSTEM.</b>										
Excision of inflamed glands . . .	7	1	1	...	3	2	2	...	...	...
„ of tuberculous glands . . .	49	66	3	14	52	33	8	2	1	2
<b>THYROID BODY.</b>										
Excision of cyst . . .	1	2	...	...	1	...	1	...	...	1
„ of adenoma . . .	...	2	...	...	...	...	1	1	...	...
„ of part of gland . . .	...	3	...	...	1	1	...	...	1	...
<b>OSSEOUS SYSTEM.</b>										
Excision of rib . . .	2	3	...	...	1	2	1	1	...	...
Exploration of femur . . .	...	1	...	...	1	...	...	...	...	...
„ of tibia . . .	1	1	...	...	...	2	...	...	...	...
„ of humerus . . .	1	...	...	...	...	...	1	...	...	...
Scraping for caries of—										
Sternum . . .	1	1	...	...	1	1	...	...	...	...
Rib . . .	4	1	1	1	1	2	...	...	...	...
Petrus bone . . .	...	1	...	1	...	...	...	...	...	...
Vertebræ . . .	...	1	...	...	...	...	1	...	...	...
Scapula . . .	1	...	...	1	...	...	...	...	...	...
Humerus . . .	4	1	1	4	...	...	...	...	...	...
Ulna . . .	1	...	1	...	...	...	...	...	...	...
Radius . . .	...	1	1	...	...	...	...	...	...	...
Carpus and metacarpus . . .	1	2	...	...	1	2	...	...	...	...
Phalanges . . .	1	1	2	...	...	...	...	...	...	...
Pelvis . . .	2	...	...	...	2	...	...	...	...	...
Femur . . .	2	3	...	...	4	...	1	...	...	...
Tibia . . .	3	3	...	...	5	1	...	...	...	...
Fibula . . .	...	1	...	1	...	...	...	...	...	...
Metatarsus and tarsus . . .	2	3	1	...	2	...	...	...	1	1
Removal of necrosed bone from—										
Inferior maxilla . . .	4	6	2	1	1	1	2	3	...	...
Superior maxilla . . .	...	1	...	1	...	...	...	...	...	...
Palate . . .	...	1	...	...	...	...	1	...	...	...
Nasal bones . . .	...	1	...	...	...	1	...	...	...	...

## Operations—continued.

Duration of residence after operation.										Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12		C.	R.	U.	D.	
...	...	...	1	...	...	...	...	...	1	...	...	...	...	Subclavian aneurysm, 3rd stage.
...	2	...	...	...	...	...	...	...	2	...	...	...	...	Secondary hæmorrhage 1.
1	...	...	...	...	...	...	...	...	...	...	...	...	1	Rupture of popliteal artery. <i>Vide</i> Abstract, Table II.
1	...	...	...	...	...	...	...	...	...	...	...	...	1	In Hunter's canal. Rupture of popliteal artery.
...	...	...	...	...	1	...	...	...	...	1	...	...	...	Secondary hæmorrhage.
...	1	1	2	1	...	...	...	...	2	...	...	...	3	Lateral sinus pyæmia 5.
...	21	34	4	...	...	...	...	...	59	...	...	...	...	
...	22	34	1	...	...	...	...	...	57	...	...	...	...	Double 2.
...	8	4	...	...	...	...	...	...	12	...	...	...	...	
1	2	3	2	...	...	...	...	...	6	1	1	...	...	
1	66	42	6	...	...	...	...	...	115	...	...	...	...	
...	...	3	...	...	...	...	...	...	3	...	...	...	...	
...	...	2	...	...	...	...	...	...	2	...	...	...	...	
...	...	3	...	...	...	...	...	...	3	...	...	...	...	Isthmus 1, lobe 2. Parenchymatous in all.
...	2	2	...	1	...	...	...	...	3	1	...	1	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	1	1	...	...	...	...	...	1	1	...	...	...	Abscess 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	...	Abscess 1.
...	1	1	...	...	...	...	...	...	2	...	...	...	...	Excision of abscess 1.
...	2	2	1	...	...	...	...	...	3	2	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	...	...	1	...	...	...	Spinal caries 1.
...	1	...	...	...	...	...	...	...	1	...	...	...	...	
...	2	3	...	...	...	...	...	...	2	3	...	...	...	Readmission 2.
...	...	1	...	...	...	...	...	...	1	...	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	...	
1	2	...	...	...	...	...	...	...	...	3	...	...	...	
1	...	1	...	...	...	...	...	...	1	1	...	...	...	
...	...	1	1	...	...	...	...	...	1	1	...	...	...	Sacro-iliac disease 1.
...	...	1	3	...	...	1	...	...	1	1	...	...	3	
...	1	2	3	...	...	...	...	...	4	2	...	...	...	Abscess of tibia 2; caries of os calcis 1.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
...	1	3	1	...	...	...	...	...	1	4	...	...	...	
1	6	3	...	...	...	...	...	...	9	...	...	1	...	Fatal: tuberculous broncho-pneumonia.
...	1	...	...	...	...	...	...	...	...	1	...	...	...	
1	...	...	...	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	...	Ozæna.

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Sex.		Age.								
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	
OSSEOUS SYSTEM— <i>continued.</i>											
Removal of necrosed bone from—											
Skull . . . . .	1	...	...	...	...	...	...	1	...	...	
Clavicle . . . . .	1	...	...	...	...	...	1	...	...	...	
Humerus . . . . .	3	...	1	...	...	1	1	...	...	...	
Radius . . . . .	1	...	...	...	1	...	...	...	...	...	
Ulna . . . . .	1	...	...	...	1	...	...	...	...	...	
Digits . . . . .	1	...	...	...	1	...	...	...	...	...	
Pelvis . . . . .	2	1	...	1	2	...	...	...	...	...	
Femur . . . . .	12	4	...	1	11	1	2	1	...	...	
Tibia . . . . .	14	4	...	2	13	1	2	...	...	...	
Tarsus and metatarsus . . . . .	5	3	...	3	3	...	1	...	...	1	
ARTICULAR SYSTEM.											
<i>Shoulder</i> —Excision . . . . .	...	1	...	...	...	...	1	...	...	...	
Arthrotomy . . . . .	1	...	...	1	...	...	...	...	...	...	
<i>Elbow</i> —Excision . . . . .	1	...	...	1	...	...	...	...	...	...	
Arthrectomy . . . . .	1	2	...	2	1	...	...	...	...	...	
Arthrotomy . . . . .	2	1	1	2	...	...	...	...	...	...	
<i>Wrist</i> —Excision . . . . .	2	1	...	...	...	1	1	1	...	...	
Arthrotomy . . . . .	...	1	...	...	...	1	...	...	...	...	
<i>Hip</i> —Excision . . . . .	5	3	3	1	3	1	...	...	...	...	
Arthrectomy . . . . .	2	1	1	2	...	...	...	...	...	...	
Arthrotomy . . . . .	9	5	4	3	4	2	1	...	...	...	
<i>Knee</i> —Excision . . . . .	5	1	1	1	1	1	...	1	1	...	
Arthrectomy . . . . .	2	2	...	2	2	...	...	...	...	...	
Arthrotomy . . . . .	2	5	3	...	1	1	2	...	...	...	
Extraction of loose bodies . . . . .	4	...	...	...	...	2	1	1	...	...	
Aspiration . . . . .	1	...	...	...	...	1	...	...	...	...	
<i>Ankle</i> —Excision . . . . .	2	...	...	1	1	...	...	...	...	...	
Arthrectomy . . . . .	2	...	1	1	...	...	...	...	...	...	
Arthrotomy . . . . .	1	...	...	1	...	...	...	...	...	...	
<i>Sacro-iliac</i> —Arthrectomy . . . . .	...	1	...	...	...	1	...	...	...	...	
<i>Metatarso-phalangeal</i> —Excision . . . . .	2	4	...	...	2	2	1	...	...	1	
<i>Carpo-metacarpal</i> —Excision . . . . .	1	...	...	...	...	...	...	1	...	...	
<i>Phalangeal</i> —Excision . . . . .	14	9	...	13	10	...	...	...	...	...	
Passive movement . . . . .	8	5	...	...	1	5	3	4	...	...	
LOCOMOTOR SYSTEM— <i>Various.</i>											
Excision of bursa and ganglion . . . . .	7	21	...	3	7	9	5	3	...	1	
Scraping of teno-synovitis . . . . .	6	1	...	...	1	1	1	2	2	...	
Amputation for disease—Hip . . . . .	...	1	...	...	...	...	1	...	...	...	



## Operations—continued.

Duration of residence after operation.									Result.				Remarks.
Dys.	Wks	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
1-5	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12					
	1	...	...	...	...	...	...	...	1	...	...	...	
	1	...	...	...	...	...	...	...	...	...	1	...	
	1	2	...	...	...	...	...	...	...	2	...	1	Fatal: empyema.
	...	1	...	...	...	...	...	...	1	...	...	...	
	...	1	...	...	...	...	...	...	...	1	...	...	
	1	1	...	...	...	...	...	...	1	...	...	...	
	1	...	1	...	...	...	...	...	1	1	...	1	Fatal: extensive disease.
	2	4	7	2	...	1	...	...	10	6	...	...	
	3	4	8	2	...	...	...	...	10	8	...	...	Fibula 2.
	2	3	3	...	...	...	...	...	6	2	...	...	Tibia 1.
	...	1	...	...	...	...	...	...	...	1	...	...	Tuberculous.
	...	...	...	1	...	...	...	...	1	...	...	...	Suppurative arthritis 1.
	1	...	...	...	...	...	...	...	1	...	...	...	Head of radius only. Old dislocation.
	1	...	1	1	...	...	...	...	1	2	...	...	Tubercle 3.
	1	...	...	1	...	...	...	...	1	...	...	2	Suppurative arthritis 3.
	...	1	2	...	...	...	...	...	3	...	...	...	Tubercle 3. Langenbeck 2; transverse division of tendons 1.
	...	...	1	...	...	...	...	...	1	...	...	...	
	...	2	3	1	1	1	...	...	...	7	...	1	Tubercle 8. Posterior excision 2, anterior 6.
	...	1	1	1	...	...	...	...	...	3	...	...	Tubercle 3.
	1	2	8	2	1	...	...	...	2	10	...	2	Tubercle 11; septic arthritis 1; arthritis, cause? 1.
	...	...	5	...	1	...	...	...	4	...	1	1	Tubercle 6. Followed by amputation of thigh 1. Fatal: phthisis.
	...	...	4	...	...	...	...	...	2	2	...	...	Tubercle 4. Localised 1.
	1	2	2	1	...	...	...	...	2	4	...	1	Tubercle 3. Readmission 1. Septic arthritis 3; synovitis, cause? 1.
	1	2	1	...	...	...	...	...	4	...	...	...	
	...	...	1	...	...	...	...	...	...	1	...	...	Arthritis, cause? 1.
	...	1	...	...	1	...	...	...	1	1	...	...	Anterior excision 2. Tubercle 2.
	...	1	...	1	...	...	...	...	2	...	...	...	Multiple excisions 2. Tubercle 1; suppurative arthritis 1.
	...	...	...	1	...	...	...	...	1	...	...	...	Suppurative arthritis.
	...	...	...	1	...	...	...	...	...	1	...	...	Tubercle 1. Through ilium 1.
	1	5	...	...	...	...	...	...	6	...	...	...	Suppurating bursa 1; ankylosis 1; hallux valgus 3; hallux rigidus 1.
	1	...	...	...	...	...	...	...	1	...	...	...	Old injury.
	13	9	...	...	...	...	...	...	23	...	...	...	Hammer-toe in all.
	1	4	4	1	...	...	...	...	5	8	...	...	
	...	...	...	...	...	...	...	...	...	...	...	...	
	16	5	1	...	...	...	...	...	26	2	...	...	Tuberculous 5.
	4	2	1	...	...	...	...	...	4	3	...	...	Tuberculous 6.
	...	...	...	...	...	...	...	...	...	...	...	1	Furneau Jordan. Tuberculous 1.

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60
<b>LOCOMOTOR SYSTEM—<i>Various—continued.</i></b>										
Amputation for disease—Thigh . . . . .	6	5	...	...	4	1	1	2	2	1
Through knee . . . . .	...	2	...	...	2	...	...	...	...	...
Leg . . . . .	4	...	...	...	...	...	1	1	...	2
Digits . . . . .	13	3	...	...	4	4	1	3	1	3
Primary amputation—Arm . . . . .	1	...	...	...	...	...	...	1	...	...
Leg . . . . .	1	...	...	...	...	...	...	1	...	...
Syme . . . . .	1	...	...	...	...	...	...	1	...	...
Digits . . . . .	2	...	...	...	...	2	...	...	...	...
Phalanges . . . . .	1	...	...	...	...	...	...	...	...	1
Secondary amputation—Thigh . . . . .	2	...	...	...	1	...	...	...	1	...
Leg . . . . .	2	...	...	...	...	...	...	...	1	1
Syme . . . . .	1	...	...	...	...	...	...	1	...	...
Digits . . . . .	3	...	...	...	2	...	...	...	...	1
Phalanges . . . . .	2	...	1	...	...	1	...	...	...	...
Wiring of tibia . . . . .	1	...	...	...	...	...	1	...	...	...
" of femur . . . . .	1	...	...	...	...	...	1	...	...	...
" of patella . . . . .	11	3	...	...	1	6	2	4	1	...
" of olecranon . . . . .	1	...	...	...	...	1	...	...	...	...
" of clavicle . . . . .	1	...	...	...	...	...	1	...	...	...
Reduction of dislocations—Humerus . . . . .	4	1	...	...	...	1	3	...	...	1
Radius and ulna . . . . .	1	...	1	...	...	...	...	...	...	...
Thumb . . . . .	1	...	...	1	...	...	...	...	...	...
Inferior maxilla . . . . .	1	...	...	...	...	...	...	...	...	1
Resection and suture of tendons . . . . .	4	2	...	...	2	2	2	...	...	...
Suture of tendons . . . . .	7	1	...	...	2	3	3	...	...	...
<b>NERVOUS SYSTEM.</b>										
Removal of portion of skull . . . . .	3	2	...	...	...	2	3	...	...	...
Exploration of nerves . . . . .	1	1	...	...	...	...	1	1	...	...
Nerve suture . . . . .	2	5	1	...	1	3	1	1	...	...
Resection and suture of nerves . . . . .	1	1	...	...	...	1	...	1	...	...
Nerve stretching . . . . .	1	...	...	...	...	1	...	...	...	...
Neurectomy . . . . .	1	...	...	...	...	...	...	1	...	...
Laminectomy . . . . .	4	...	...	...	3	...	...	1	...	...
Exploration of frontal lobes . . . . .	1	...	...	...	...	1	...	...	...	...

## Operations—continued.

Duration of residence after operation.									Result.				Remarks.
Ys.	Dys.	Wks	Mts.	Mts.	Mts.	Mts.	Mts.	Mts.	C.	R.	U.	D.	
-4	5-13	2-4	1-2	2-4	4-6	6-9	9-12	+12					
...	...	7	3	1	...	...	...	...	10	...	...	1	Middle third 1, upper third 1, lower third 9. Diabetic gangrene 1.
...	...	...	2	...	...	...	...	...	2	...	...	...	Double. Congenital absence of tibiae. Anterior flap.
3	...	1	...	...	...	...	...	...	1	...	...	3	Upper third 4. Glycosuric gangrene 2; septic gangrene 1.
1	11	3	1	...	...	...	...	...	16	...	...	...	Toes 6, fingers 10. Glycosuric gangrene 1.
...	...	...	1	...	...	...	...	...	1	...	...	...	Lower third.
...	...	...	1	...	...	...	...	...	1	...	...	...	
...	...	...	1	...	...	...	...	...	1	...	...	...	
...	2	...	...	...	...	...	...	...	2	...	...	...	Thumb through metacarpus 1.
...	...	...	1	...	...	...	...	...	1	...	...	...	
...	...	1	1	...	...	...	...	...	2	...	...	...	Emphysematous gangrene 1. Upper third 1, middle third 1.
1	...	...	1	...	...	...	...	...	1	...	...	1	Fatal: tubal nephritis.
...	...	...	...	1	...	...	...	...	1	...	...	...	
...	1	2	...	...	...	...	...	...	3	...	...	...	Toe 2, finger 1.
...	1	1	...	...	...	...	...	...	2	...	...	...	Hand 1, foot 1.
...	...	...	...	1	...	...	...	...	1	...	...	...	Compound comminuted fracture.
...	...	...	...	...	...	...	1	...	1	...	...	...	Ununited fracture.
...	1	10	2	1	...	...	...	...	13	...	1	...	Compound comminuted fracture 1. Suppuration 1. Wires pulled out 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	Simple fracture.
...	...	...	1	...	...	...	...	...	...	...	1	...	Ununited fracture. Necrosis. No union on discharge.
3	2	...	...	...	...	...	...	...	4	...	1	...	6 months' standing and failure 1.
1	...	...	...	...	...	...	...	...	...	1	...	...	Partial reduction.
1	...	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	...	...	...	...	...	...	1	...	...	...	Double. 5 weeks' duration.
1	4	1	...	...	...	...	...	...	6	...	...	...	
3	3	2	...	...	...	...	...	...	8	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	
...	1	...	3	...	1	...	...	...	1	2	1	1	For relief of tension 3. Jacksonian epilepsy 1; ? general paralysis 1.
...	2	...	...	...	...	...	...	...	...	2	...	...	Median 1, ulnar 1.
...	2	4	1	...	...	...	...	...	6	1	...	...	External popliteal 1, median 2, ulnar 2, radial 2.
...	...	2	...	...	...	...	...	...	2	...	...	...	Ulnar 1, median 1.
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	Inferior dental.
...	...	...	1	1	2	...	...	...	2	2	...	...	Spinal caries 1; fractured spine, remote operation 1. (Paraplegia, cause? 2, same case.)
...	1	...	...	...	...	...	...	...	...	...	...	1	Abscess present but not found. <i>Vide</i> "Compound depressed fracture of base and vertex."

TABLE III.—Surgical

SURGICAL OPERATIONS.	Sex.		Age.							
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+6
<b>RESPIRATORY SYSTEM.</b>										
Estlander . . . . .	1	...	...	...	...	...	...	1	...	...
Tracheotomy . . . . .	13	3	6	...	...	1	3	5	1	...
Drainage of maxillary antrum . . . . .	3	6	...	...	...	7	1	...	1	...
" of frontal sinus . . . . .	2	2	...	...	2	1	1	...	...	...
Thyrotomy . . . . .	3	...	1	...	...	...	2	...	...	...
Intubation . . . . .	1	...	...	1	...	...	...	...	...	...
Hypertrophic rhinitis . . . . .	...	1	...	...	...	1	...	...	...	...
Resection of rib . . . . .	7	1	...	3	1	2	2	...	...	...
<b>AUDITORY SYSTEM.</b>										
Incision of membrane . . . . .	...	1	...	...	...	1	...	...	...	...
Extraction of foreign body . . . . .	...	1	...	1	...	...	...	...	...	...
" of aural polyp . . . . .	...	1	...	...	1	...	...	...	...	...
Removal of bone from mastoid . . . . .	22	25	9	5	17	12	3	1	...	...
Exploration of temporo-spheroidal lobe . . . . .	...	4	...	1	2	1	...	...	...	...
" of cerebellum . . . . .	...	4	1	...	2	1	...	...	...	...
" of motor area . . . . .	...	1	...	...	1	...	...	...	...	...
<b>DEFORMITIES.</b>										
Osteotomy of femur, subtrochanteric . . . . .	3	...	...	...	3	...	...	...	...	...
" " Macewen's . . . . .	10	9	2	2	14	1	...	...	...	...
" of tibia and fibula . . . . .	2	3	2	...	3	...	...	...	...	...
" of tibia . . . . .	1	2	...	2	1	...	...	...	...	...
" of metatarsus . . . . .	1	...	...	...	...	1	...	...	...	...
Plastic . . . . .	8	13	2	2	4	7	3	3	...	...
Rhinoplasty . . . . .	...	4	...	...	2	...	...	2	...	...
For Dupuytren's contraction . . . . .	5	...	...	...	...	...	...	3	...	...
Tenotomy for pes planus . . . . .	1	...	...	...	1	...	...	...	...	...
" for infantile paralysis . . . . .	...	1	...	...	1	...	...	...	...	...
" for talipes . . . . .	12	8	2	6	9	3	...	...	...	...
" for torticollis . . . . .	2	1	1	1	1	...	...	...	...	...
" of plantar fascia . . . . .	6	3	...	3	6	...	...	...	...	...
Phelps's . . . . .	4	1	...	3	1	1	...	...	...	...
Tarsectomy . . . . .	3	...	3	...	...	...	...	...	...	...
Wrenching for pes planus . . . . .	2	1	...	...	2	1	...	...	...	...
Deviation of septum of nose . . . . .	2	...	...	...	2	...	...	...	...	...
Suture of external abdominal ring . . . . .	1	...	...	...	...	1	...	...	...	...
Pegging of knee . . . . .	1	...	...	1	...	...	...	...	...	...
Avulsion of nail . . . . .	...	4	...	...	2	2	...	...	...	...
Lateral distortion of nose . . . . .	1	...	...	1	...	...	...	...	...	...

## Operations—continued.

Duration of residence after operation.									Result.				Remarks.
Dys. 1-4	Dys. 5-13	Wks 2-4	Mts. 1-2	Mts. 2-4	Mts. 4-6	Mts. 6-9	Mts. 9-12	Mts. +12	C.	R.	U.	D.	
...	...	...	1	...	...	...	...	...	...	...	...	1	Fatal: caseous broncho-pneumonia.
6	2	4	3	...	1	...	...	...	5	5	...	6	
1	4	3	1	...	...	...	...	...	7	2	...	...	
...	1	1	2	...	...	...	...	...	2	2	...	...	Double 1.
...	...	2	1	...	...	...	...	...	1	2	...	...	Syphilitic laryngitis 2; papilloma of larynx.
...	...	1	...	...	...	...	...	...	1	...	...	...	Inability to leave out tracheotomy tube.
1	...	...	...	...	...	...	...	...	...	1	...	...	Cautery.
...	...	1	6	1	...	...	...	...	5	1	...	2	Bronchiectasis 1; malignant, of lung 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	1	...	...	...	
...	1	...	...	...	...	...	...	...	...	1	...	...	
1	14	26	4	1	...	...	1	...	2	38	...	7	Syphilitic sclerosis 2. Stacke's operation 16.
2	...	2	...	...	...	...	...	...	...	...	...	4	Exostosis of meatus, 1; pyæmia 1.
2	1	1	...	...	...	...	...	...	...	...	...	4	Abscess found 1; abscess present but not found 1.
1	...	...	...	...	...	...	...	...	...	...	...	1	Meningitis.
...	...	...	2	1	...	...	...	...	3	...	...	...	
...	...	6	9	4	...	...	...	...	19	...	...	...	Genu valgum 13, genu varus 2. Tibia and fibula also 1, tibia also 1.
...	...	3	2	...	...	...	...	...	5	...	...	...	Genu valgum 5.
...	...	...	3	...	...	...	...	...	3	...	...	...	Ankylosis of knee 1, rachitis 2; cuneiform 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	Hallux valgus.
3	3	9	4	1	1	...	...	...	14	7	...	...	Fingers 4, face 6, elbow 2, popliteal space 1, deformed nose 6, deformed ear 2. See also "Thiersch's grafts."
...	...	2	...	2	...	...	...	...	4	...	...	...	Indian operation in two stages 2.
...	5	...	...	...	...	...	...	...	5	...	...	...	Thiersch grafts 2.
1	...	...	...	...	...	...	...	...	...	1	...	...	Peronei.
...	1	...	...	...	...	...	...	...	...	1	...	...	Peronei.
6	9	4	...	1	...	...	...	...	3	16	...	1	Talipes equino-varus 3, talipes equinus 17.
...	1	2	...	...	...	...	...	...	2	1	...	...	Sterno-mastoid 3, trapezius 1.
...	2	5	2	...	...	...	...	...	...	9	...	...	Talipes equino-varus 1, talipes equinus 8.
...	...	...	2	2	1	...	...	...	5	...	...	...	Talipes equino-varus 5.
...	...	3	...	...	...	...	...	...	1	2	...	...	Talipes equino-varus 3.
1	2	...	...	...	...	...	...	...	...	3	...	...	Plaster splints.
1	1	...	...	...	...	...	...	...	2	...	...	...	
...	...	1	...	...	...	...	...	...	1	...	...	...	
...	...	1	...	...	...	...	...	...	...	1	...	...	Infantile paralysis.
...	3	...	1	...	...	...	...	...	4	...	...	...	Ingrowing toe-nail.
1	...	...	...	...	...	...	...	...	1	...	...	...	Replaced.



TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Sex.		Age.								
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60	
MALFORMATIONS.											
Single harelip . . . . .	4	4	8	...	...	...	...	...	...	...	
Double harelip . . . . .	4	2	6	...	...	...	...	...	...	...	
Cleft palate . . . . .	5	5	6	2	1	1	...	...	...	...	
Perforate palate . . . . .	1	...	...	...	1	...	...	...	...	...	
Removal of pre-maxilla . . . . .	3	...	3	...	...	...	...	...	...	...	
Excision of branchial cyst . . . . .	1	...	1	...	...	...	...	...	...	...	
Extroversion of bladder . . . . .	1	...	...	1	...	...	...	...	...	...	
Epispadias . . . . .	...	2	...	...	...	2	...	...	...	...	
Hypospadias . . . . .	1	...	1	...	...	...	...	...	...	...	
Imperforate rectum . . . . .	...	3	3	...	...	...	...	...	...	...	
"    anus . . . . .	1	...	1	...	...	...	...	...	...	...	
"    small gut . . . . .	...	1	1	...	...	...	...	...	...	...	
Meningo-myelocele . . . . .	...	1	1	...	...	...	...	...	...	...	
Meningocele . . . . .	...	1	...	...	...	1	...	...	...	...	
Injection of meningo-myelocele . . . . .	1	...	1	...	...	...	...	...	...	...	
Incision of meningo-myelocele . . . . .	1	...	1	...	...	...	...	...	...	...	
MISCELLANEOUS.											
Trephining and raising of depressed frac- ture of skull	3	1	...	...	1	2	1	...	...	...	
Raising of depressed fracture of skull and removal of fragments	2	1	...	2	1	...	...	...	...	...	
Exploration of brain . . . . .	1	...	...	...	1	...	...	...	...	...	
Scraping of sinuses . . . . .	17	14	2	6	8	7	3	1	3	1	
Irrigation and suture of spinal abscess	7	1	1	4	2	...	1	...	...	...	
"    and drainage of spinal abscess	7	4	1	3	4	2	1	...	...	...	
Aspiration of pleura . . . . .	1	1	1	...	1	...	...	...	...	...	
Scraping ulcer . . . . .	2	...	...	...	...	2	...	...	...	...	
Excision of ulcer . . . . .	2	2	...	...	1	1	...	...	2	...	
Scraping of lupus . . . . .	2	15	...	...	6	6	2	2	...	1	
Excision of lupus . . . . .	4	7	...	1	5	5	...	...	...	...	
Scraping of syphilitic ulceration . . . . .	...	1	...	...	1	...	...	...	...	...	
"    of carbuncle . . . . .	2	1	...	...	...	...	...	2	1	...	
Thiersch grafting . . . . .	13	10	...	4	10	7	...	1	...	1	
Excision of eye . . . . .	1	...	...	...	...	...	...	1	...	...	
Extraction of foreign body . . . . .	3	7	1	...	1	2	2	2	2	...	
Removal of wire from patella . . . . .	1	...	...	...	...	...	1	...	...	...	
"    of projecting piece of bone . . . . .	2	...	...	...	1	...	...	1	...	...	
Straightening of vicious union . . . . .	1	...	...	...	...	...	...	...	...	1	
Disruption of fracture . . . . .	1	...	...	...	1	...	...	...	...	...	
Excision of anthrax pustule . . . . .	1	1	...	...	1	1	...	...	...	...	
"    of wound of thumb . . . . .	2	...	...	...	...	...	1	...	1	...	
Total . . . . .	1152 795										
1947											



## SUMMARY OF DISEASES.

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### GENERAL DISEASES.

#### ERYSIPELAS (admitted with the disease).

Males 57, females 51. C. 95, R. 1, D. 12.

*Situation.*—Upper extremity 11; lower extremity 12; back 2; trunk and limbs 2; neck 2; face 1; upper extremity 1; remainder face and scalp; cellular cutaneous 7; recurrent 8.

*Mode of entrance of micro-organism.*—Wounds 15; burn 1; blow 1; suppurating mastoid glands 1; scald 1; suppurating bursa of knee 1; sinus 2; ulcer 2; lupus 1; vaccination 1.

*Treatment.*—Incisions 12; hot lotions or wool in remainder.

#### *Fatal cases.*

1. E. P—, female, æt. 53. Facial erysipelas. Admitted with well-marked facial erysipelas of 4 days' standing, and in a semi-unconscious condition. Albuminuria. Syncopic attack on 4th day, from which the patient never rallied. Temperature between 100° and 103°. P.M.—Lungs œdematous and congested. Liver fatty. Cloudy swelling of kidneys.

2. J. P—, male, æt. 65. Erysipelas of face. Porter (railway). Burn of shoulder few days previously, on which erysipelas of face supervened. Temp. 101·6°. Gouty arthritis of great toe. Albuminuria. Rhonchi in both lungs. Unconscious evacuation of excreta. Clonic spasms of limbs. Total coma. Death on 15th day. P.M.—Pneumonia of right base. Heart covered with fat. Both ventricles hypertrophied. Right renal calculus. Fatty change in both kidneys, with some small cysts.

3. J. D—, male, æt. 50. Erysipelas of arm. Blow on elbow 1 week previously. No skin abrasion. Two days before admission arm suddenly swelled up. Admitted with well-marked rash over whole of arm, which was covered with blebs. Incision over olecranon. Lead lotion. Delirium. Death within 24 hours. P.M.—Tissues œdematous. No pus. Lung œdematous and black with stagnant blood. Kidney full of blood, but otherwise healthy. Slight staining of endocardium.

4. A. H—, female, æt. 58. Erysipelas of face, back, and buttocks. Rheumatic fever 8 weeks. Erysipelas 10 days. Rash passing off face and back, but well marked on buttocks and thighs. Trace of albumen in urine. Rash passed to feet and legs, fading from thighs. Attacks of dyspnœa. Death on 20th day. P.M.—Lungs engorged at bases. Heart covered with fat, muscle soft and pale. Kidneys suggestive of tubal nephritis. Liver large and fatty.

5. A. C—, female, æt. 29. Facial erysipelas. Admitted delirious, with well-marked attack of facial erysipelas. Vomiting. Rigors. Bronchitis. Great restlessness. Temp. 103° F. Bronchitis more marked. Death on 13th day. P.M.—Lungs congested and œdematous. Left kidney represented by small flat plate. Right kidney enlarged and congested. Other organs normal.

6. H. F—, male, æt. 59. Cellulo-cutaneous erysipelas of arm. Poisoned finger 2 weeks previously; gradually became swollen and painful. Admitted with cellulo-cutaneous erysipelas of arm and shoulder. Patient very weak. Temp. 103°. Pulse 120. Lot. Plumbi; stimulant. Death on 6th day, apparently from respiratory failure. P.M.—Lower lobes of both lungs solid from pneumonia, remainder of lungs œdematous.

7. S. M—, male, æt. 34. Erysipelas of legs. Admitted with ulcers of legs and cutaneous erysipelas. Very weak. Lot. Plumbi; stimulants. Died on 6th day. P.M.—Lungs œdematous. Heart flabby.

8. M. H—, female, æt. 65. Cellulo-cutaneous erysipelas of arm. Admitted with 1 week's history, cause unknown. Great feebleness and difficulty of respiration. Temp. 103·4°. Death within 24 hours. P.M.—No obvious pathological change in organs.

9. F. W—, male, æt. 7 weeks. Erysipelas of abdomen. Discharge from umbilicus 1 week. Rash on abdomen 1 day. Erysipelas of abdomen and limbs. Rash faded on following day. Vomiting. Death on 4th day. P.M.—Subserous petechial hæmorrhages on surface of lungs and peritoneum.

10. William A—, male, æt. 59. Facial erysipelas. Facial erysipelas 1 week; no cause. Temp. 104°. Liver enlarged. General condition became worse and worse. Death 5th day. P.M.—Chronic interstitial nephritis. Cirrhosis of liver. Hypertrophied heart.

11. H. W. C—, male, æt. 5 weeks. Facial erysipelas. Admitted with facial erysipelas; spread to shoulders and arms. Diarrhœa. Rash fading. Diarrhœa continued. Death on 12th day. P.M.—Skin hard and rigid on the chest. Intestines full of mucus.

12. R. H—, male, æt. 14 days. (*Vide* Special Table III.)

*Anthrax infection.*—1. C. F—, male, æt. 26. Coal porter. Anthrax pustule of arm. Three days before admission patient noticed small, red, round, tender spot just above the bend of the right elbow. It was the size of a threepenny bit. No origin could be traced for the infection. Two days before admission patient vomited, felt unwell, and lost his appetite. Following day symptoms became worse, and led to the patient being admitted to the hospital the next day. Typical anthrax pustule on arm just above elbow. Slough in centre surrounded by ring of vesicles, the whole being nearly as large as a penny. Much inflammation round vesicle. Tender glands in axilla. Free incision. Inflammation

went through deep fasciæ, necessitating removal of some muscle; even then some inflamed tissue was left, so the wound was cauterised with carbolic acid. Progress good, except for a little abdominal pain next day, which soon passed off. Discharged cured on 10th day. No bacilli could be found in vesicles or in scrapings of sections of pustule, which presented the typical appearance when cut.

2. M. L. H—, female, æt. 19. Married. Anthrax pustule of face. Small red pimple on cheek 13 days previously. Incised in Casualty, and dressed with boracic lotion 7 days before admission. On day of admission there was a typical anthrax pustule  $\frac{3}{4}$  inch across, with imperfect ring of vesicles. Anthrax bacilli were found in fluid of vesicles by two observers, but no bacilli found in scrapings from section of pustule, which section was quite typical. Puffy swelling of neck. Free excision of pustule. Abdominal pain on two succeeding days; otherwise progress perfect. Discharged on 19th day.

*Acute tetanus.*—1. F. J. G—, male, æt. 13. "Stiffness of jaws" 10 days. Seven days before admission mother noticed that the boy had difficulty in eating, and was generally unwell, when she put him to bed, where he remained until admission. Two days before admission boy was seized with slight spasms and pain in abdomen. Spasms increased in severity, so that his whole body was "stiff and cramped," but no spasms occurred on day before coming to hospital. On examination patient apathetic. Separation of teeth only just possible. Typical risus sardonicus. Abdominal wall intensely rigid. Lower extremities so stiff that the whole limb could be raised from the bed by lifting the thigh. Arms not so much affected as the legs. Temp. 99° F. Injection of 1½ grammes of Tizzoni-Cattani's dried serum. Chloral and bromide every 4 hours. 2nd day, condition unaltered. Injection of serum as before. 3rd day, condition improved. Slept well. Spasm did not recur through the night. Lay on side with knees drawn up. Mouth could be opened more widely. Three quarters of a gramme of serum injected. 11th day, improvement maintained. Moved into general ward. Fancy diet. 14th day, abdomen more rigid. General aspect not so good. More difficulty in opening mouth. 21st day, all rigidity gone. Temp. 103°, but due to glandular abscess and boils on head, neck, and shoulder. Discharged cured on 34th day. No means of infection with tetanus bacillus discovered.

2. L. H—, female, æt. 25. Married. Seven days before admission a rusty spike penetrated her boot, and wounded right foot. Wound suppurated a little, but healed in 4 days. Tetanus symptoms commenced the day before admission, and first manifested themselves as pain in the back of neck. On day of admission muscles of neck became rigid, and great difficulty of swallowing supervened. On examination the wound of the sole was healed, but painful. Pain in spinal muscles, and some rigidity of neck and jaw. Chloral and Pot. Bromid. every six hours. 3rd day, two attacks of spasms, the second being more severe. Opisthotonos and risus sardonicus. Well-marked spasm of deglutition and muscles of jaw. Great restlessness. Ten c.c. of tetanus antitoxin injected. 4th day, general spasm at frequent intervals. Back well arched, knee drawn up. Tongue bitten. Abdomen rigid. Injection repeated. Profuse perspiration. Intervals of sleep. Some difficulty of respiration. 5th day, injection repeated. Much pain. General quivering attacks. Spasm not quite so severe. Leg extended. Food well taken. Head moved without pain. 6th day, injection



repeated. Amelioration of symptoms. Fair amount of sleep. 7th day, patient more intelligent. Only one spasm. Restlessness more marked. Respirations rapid. 8th day, rigidity continued, but occasionally relaxed. Some twitchings of muscles. 9th day, no spasms. Pain better. Breathing irregular. 10th day, much restlessness. Restraint necessary. Rash on abdomen and ankles. Great exhaustion. 12th day, sulphonal and morphia required to quiet patient. Chloral still continued and increased. No rigidity. 14th day, rash fading. 16th day, patient very noisy and restless. Pain in abdomen. 16th day, legs and jaws rigid again. Back somewhat arched. No definite spasms. 19th day, pain in abdomen continued. Back and legs still rigid. Some twitchings of muscles. 21st day, tongue bitten. Legs still rigid, but easy to move. Solid food taken. 26th day, jaws relaxing, legs still rigid. 35th day, chloral discontinued. 40th day, all rigidity gone, except in right foot, whose sole cannot be placed on ground. Discharged cured on 44th day. Temperature never much raised; reached  $102^{\circ}$  on 11th day, but gradually subsided.

*Fatal cases.*—1. L. C—, male, æt. 55. Gardener. Five days before admission patient fell down some steps, and received a wound on his thumb, into which much dirt was ground. Stiffness of jaws and pain in the back noticed on the evening before admission. Following day these symptoms aggravated, and pain on swallowing also manifested itself. On examination, foul, sloughing wound of thumb. Muscles of neck and jaw stiff. Teeth kept apart by means of piece of wood. Slight spasm. Wound excised. Spasm of larynx. Tracheotomy, artificial respiration. Injection of 10 c.c. of tetanus antitoxin. Chloral and Pot. Brom. by rectum every 4 hours. 2nd day, small quantities of brandy swallowed. Slight twitchings of right arm and side of face. Nasal feeding. Severe spasm. Cyanosis. Profuse sweating. Two slight spasms. Injection repeated. Frequent slight spasms. Breathing more and more laboured. Nutrient enema with 50 grs. of chloral. Some sleep, during which jaw was relaxed. Series of spasms followed by death, which took place peacefully from exhaustion. Temperature once reached  $101^{\circ}$ , but was mostly just above normal. P.M.—Much decomposition. Lungs œdematous. Heart showed hypertrophy with dilatation. Aortic valves partly calcified. Slight regurgitation. Some hyperæmia of superficial vessels of brain, otherwise nervous system normal to naked eye.

2. C. F—, male, æt. 37. Patient ran a splinter of wood beneath the whole length of nail 10 days before admission. Nothing complained of until 24 hours before admission, when pain on swallowing and stiffness of neck were complained of, followed by difficulty in opening the mouth. Admitted with slight risus sardonius and rigidity of neck muscles, and occasional spasmodic closure of teeth. Respiration mostly diaphragmatic. Abdominal muscles rigid. Discoloured stain under right thumb-nail. Chloral hydrate and Pot. Bromid. first by mouth, but later by rectum every 6 hours. Chloroform given, the nail and wound incised. 2nd day, swallowing by mouth still possible, though sometimes followed by cough and spasm of muscles of deglutition. Occasional spasm of spinal muscles, though not severe. 3rd day, spasm less, so that medicine could be taken by the mouth when well diluted;  $2\frac{1}{4}$  grammes of tetanus antitoxin injected beneath skin of abdomen in two equal doses with  $\frac{3}{4}$  hour's interval. Amelioration of leg symptoms continued. 4th day,  $2\frac{1}{4}$  grammes of antitoxin again injected. Improvement continued. Temperature raised to  $102^{\circ}$  F., but fell to  $99.6^{\circ}$  in the

afternoon. 5th day, patient worse. Spasms became more and more frequent. Temperature rose to  $104.6^{\circ}$ . Antitoxin ( $1\frac{1}{2}$  grammes) again injected, followed by tepid sponging, which had but little effect. Spasms recurred frequently. Death from asthenia. P.M.—Rigor mortis extreme and universal. Lungs engorged with dark blood. Trachea and larynx showed extreme post-mortem staining. Spinal cord normal. Brain showed dilatation of vein on the surface, but was otherwise normal. Surface where nail was removed presented a glazed granulating surface. Cultivation from nail taken at time of operation, without anaërobic precautions, showed only pure culture of *Micrococcus albus*.

#### *Carcinomata.*

*Spheroidal-celled.*—*Breast.*—Females 53. C. 37, U. 13, D. 3. Married 37, of whom 22 had borne children. Family history of tumour in 11, of tubercle 7. History of abscess 2. Atrophic 4. Shortest history 14 days, longest history 121 months.

*Treatment.*—Amputation of breast and clearance of axilla 35; amputation of breast alone 3; excision of growth 2; excision of chronic interstitial mastitis 1; pectoral divided 1; axillary vein tied 1; large part of great pectoral removed 1; Thiersch grafts 1; operation not advised 14.

*Complications.*—Chronic interstitial of opposite breast 1; supra-clavicular glands 3; ulceration 8; glycosuria 1.

#### *Fatal cases.*

1. A. O—, female, æt. 40. Supra-clavicular glands removed after amputation of breast and clearance of axilla. Fatal from shock. P.M.—No secondary growths.

2. E. S—, female, æt. 46. Operation. Erysipelas. Pyæmia.

3. P. G—, female, æt. 59. Ulceration. No operation. Erysipelas. (For cases 2 and 3 see Special Table II.)

*Recurrent in breast.*—Females 5. C. 5. Interval since operation: 2 months 1, 6 months 2, 8 months 1, 9 months 1, 2nd recurrence 1. Removal 4. Amputation and clearance of axilla 1.

*Recurrent in glands.*—Females 3. C. 3. Interval since operation: 2 months 1, 4 months 1, 2nd recurrence 1. Treatment: removal 3.

*Carcinoma of lachrymal gland.*—H. H—, male, æt. 34. Miner. Small, gradually increasing tumour in external angle of orbit 4 years. On admission, a small, hard, and but little moveable tumour in upper part of outer angle of left orbit. No affection of skin or interference with eye. Tumour shelled out with elevator, and extended some way back into orbit, and left a depression in the orbital roof. Discharged on 12th day. On section the anterior part presented yellow spots in fibrous tissue, while posteriorly there was a fibrous cavity containing yellow fluid, suggesting hæmorrhagic breaking down. From the wall of the cyst ran numerous fibrous septa to the periphery. Microscopically this was a typical glandular carcinoma. Readmitted later, with a history of 1 month's recurrence. Left eye proptosed by a soft, elastic growth in upper and outer angle of orbit. Diplopia. Upward and outward movement very deficient. No pain. No optic neuritis. 8th day, eye excised in usual way after division of external canthus. Growth found to extend to the apex of orbit, and

involved outer wall and roof, and outer half of upper lid. Growth separated by elevator and removed with eye, and the orbit completely cleaned out. Outer half of upper lid removed. Orbital roof removed with chisel, and lachrymal fossa and outer wall with saw. Discharged on 33rd day.

*Carcinoma of parotid.*—M. T—, female, æt. 44. Single. Swelling in region of left parotid 3 years. On first appearance it was the size of a Spanish nut, and at the time of its appearance an aural polyp was removed from the ear of the same side. Three months later the parotid growth was removed, but only partially. Removal again 3 months later, after which there was an interval of 3 months' freedom. At the end of this time tumour again began to grow rapidly. Ten months previously to admission daily injection of methyl violet was practised, but caused no diminution in rapidity of growth. Treatment continued for 2 months, and then abandonod. On examination a large nodular tumour raising and pushing back the lobule of the left ear. Above it extended 2 inches above the zygoma. In front it overlapped the vertical ramus of the inferior maxilla. Above the tumour was fixed deeply, but below felt more moveable. Skin involved. Behind the ear was a nodular mass the size of a florin, which had appeared lately. Some difficulty in mastication and pain in the ear, but no facial paralysis. Attempted removal. Bone found much involved. Operation abandoned. Microscopically the growth was a glandular carcinoma.

*Carcinoma of kidney.*—T. K—, male, æt. 36. Dull intermittent pain in right loin and back for 5 months, associated latterly with vomiting and hæmaturia. Loss of flesh. No renal colic. On admission abdominal muscles rigid. Large hard tumour in right kidney region, reaching from ribs almost to anterior superior spine, and forwards midway to umbilicus. Dull on percussion, and continuous with the liver dulness. Under anæsthetic the tumour was fairly moveable. Temperature varied between 103° F. and normal. Abdominal nephrectomy through right semilunar line. Considerable ascites. Adhesions about kidney. Pedicle tied. Considerable hæmorrhage arrested by plugging. Wound closed. Great shock. Infusion of 4 pints of normal saline. Death. P.M.—Ligatures *in situ* on renal vein. Partially discoloured clot in vena cava, which originated in the right renal vein, where it was caused by extension of growth into that vessel. Both above and below the renal vein the vena cava was surrounded by a gelatinous growth which was thought to be infiltrated glands. The clot in vena cava extended its whole length, and was fairly adherent. The veins on left side of abdomen, especially the spermatic, were much enlarged. The growth was a glandular carcinoma.

#### *Columnar.*

*Duct carcinoma of breast.*—C. K—, female, æt. 27. Single. Tumour of left breast 6 years, with increased rapidity of growth the last 18 months. On admission, a tumour measuring 2½ inches × 1¼ inches, situated beneath, above and externally to the nipple. Consistence firm and surface nodular. No retraction of nipple, but some serous discharge. Tumour fairly moveable, but the skin is slightly attached above and to the outer side of nipple. Tumour excised and shelled out, except at one place, which presented a cut surface when removed. (Tumour solid.) Microscope showed columnar carcinoma.

*Carcinoma of cæcum; excision of growth; suture of intestine.*—J. L—, male,

æt. 30. Carpenter. Pain in right side of abdomen with alternating diarrhoea and constipation 10 weeks. Increase of pain and gradual localisation to right iliac fossa. Treated for appendicitis, and kept in bed until 10 days before admission, when patient got about, but was compelled on account of pain to take to his bed again after 4 days, where he has remained up to admission. On examination tenderness over McBurney's point. Indefinite tumour in cæcal region resembling thickened appendix. Pain down right thigh. Symptoms of pain relieved by rest. Discharged on 18th day. Readmitted after 14 days with recrudescence of pain and tenderness in iliac fossa. Indefinite tumour still present. 5th day, thickened appendix clearly felt. 21st day, cœliotomy. Cæcum surrounded by adhesion. Appendix normal. Cæcum seat of carcinomatous growth. Excision of cæcum with small portion of ileum and ascending colon. Lateral implantation of ileum into colon by a modification of Maunsell's method. Lower end of colon not closed, but sutured to skin. 70th day, skin freed round edges of artificial anus. Gut freed, and edges inverted and sutured. Skin edges brought into apposition. Operation altogether outside the peritoneum. Fæcal fistula again established. Operation repeated on 123rd day. Discharged on 175th day with simple fistula.

*Carcinoma of ascending colon; resection and suture of colon.*—1. Wm. B—, male, æt. 26, clerk. No family history of carcinoma. Abdominal pain 5 months, which latterly became localised to right side of abdomen. Bowels regular. On admission body well nourished; abdomen normal to inspection. On palpation a hard mass, the size of an orange, could be felt to begin just above and external to right antero-superior spine, and reach up to tip of ninth rib, and pass back into loin; not tender; immobile on respiration, but a little displaceable inwards by pressure. Abdominal resonance diminished over tumour. Incision over tumour through right rectus sheath. Carcinoma of ascending colon, about 3 inches of bowel involved. No infection of abdomen. No glands. Excision of 8 inches of colon. Circular enterorrhaphy by two continuous silk sutures, a bone bobbin being used as a splint, and allowed to slip away afterwards. A few interrupted Lembert sutures used. Mesentery not sutured, as no space was left. Flatus passed on 4th day. Bowels open naturally on 8th day. Progress perfect. Discharged cured on 40th day. Growth had not occluded lumen of bowel, but presented a rough, irregular, ulcerated surface, which completely surrounded the gut.

2. J. E—, male, æt. 46. Gave a history of 6 months' malaise, and 2 weeks' loss of flesh and griping pain in abdomen. For 6 weeks before admission bowels were only relieved by castor oil. On admission a tumour as large as a hen's egg was felt in right lumbar region, just above antero-superior spine. Resonant on percussion, slightly tender on palpation and moveable within certain limits. Cœliotomy in right semilunar line. Growth found in ascending colon about 1 inch above cæcum, and connected by inflammatory adhesions to the duodenum. Eight inches of colon, the cæcum, and about 1 inch of ileum were excised. Circular enterorrhaphy over an Allingham's bone tube was performed, the ends being fastened over the tube by a continuous silk suture through all coats, which was tied down, the apposition being finished by interrupted silk Lembert sutures. Progress was good, flatus being passed early, and there being no signs of obstruction. On the 7th day a fæcal fistula formed, while on the 21st day a large slough



of intestine was extracted from the wound. After this the faecal fistula gradually closed, and the patient was discharged on the 69th day after operation. Growth was a columnar-celled carcinoma, which had produced partial obstruction by fungating into lumen of the colon.

*Carcinoma of sigmoid flexure.*—S. H—, male, æt. 60. Pain in abdomen 3 days. Admitted with distended abdomen and constipation. Enemata produced no result. No growth felt. Celiotomy in mid-line. Left inguinal colotomy. Bowel opened in few hours. Evacuation of fæces. Death on 3rd day. P.M.—Ring carcinoma of sigmoid, reducing lumen to the size of an ordinary penholder. No ulceration. Scirrhus growth.

*Carcinoma of rectum.*—Males 10, females 15. C. 5, R. 8, U. 8, D. 4. Duration above 1 year: 18 months 1, 16 months 1. Intussusception 1.

*Situation.*—Distance from anus: extruding 1, close to anus 1;  $1\frac{1}{2}$ " from anus 2; 2", 6;  $2\frac{1}{2}$ ", 1; 3", 5; 4", 3; junction of sigmoid and rectum 1; "high up" 1.

*Treatment.*—Left inguinal colotomy 8; right inguinal colotomy 1; left lumbar 1; gut divided 7; excision of rectum 5, including 1 Kraske's operation.

*Excision of rectum by Kraske's method modified.*—A. P—, female, æt. 31, married. Diarrhœa followed by difficulty of defecation and narrowing of motions 1 month. Prolapse of rectum. Annular carcinomatous growth at such a distance from anus that the finger can be passed beyond. No ulceration. Sacrum divided below fourth foramen; rectum exposed; glands ablated; growth excised; circular enterorrhaphy of rectum over bobbin. Faecal fistula, which gradually closed. Discharged on 32nd day. Admitted later with fibrous stricture and local recurrence.

*Fatal case.*—S. M—, female, æt. 78. Admitted with thrombosis of veins of leg of 4 days' duration. Lotio Plumbi applied. Incisions 37th day. Bowels open twice or three times a day. Blood and mucus passed *per rectum*. Examination revealed an intussusception, on the apex of which was an ulcer. Death on 39th day. P.M.—Intussusception involved rectum and sigmoid flexure, and was easily reducible. Mucous membrane congested.

#### *Squamous.*

*Tongue.*—Males 21, females 1. C. 14, U. 5, D. 3. History of syphilis 7. Leucoplakia 4. Duration above 1 year 1; 2 years 2; 3 years 1. Glands involved 9; floor of mouth involved 2; albuminuria 1.

*Treatment.*—Partial excision of tongue 10; total excision 7. Removal of glands 3; ligature of lingual 3; both linguals 1; external carotid 2; facial 1; cheek slit up 1.

#### *Fatal cases.*

1. T. S—, male, æt. 58. Foul epitheliomatous ulcer of tongue. Excision of tongue after ligation of both linguals. 3rd day, temp.  $103^{\circ}$ . Right ligation wound discharged foul pus. Fetid expectoration. Death on 13th day after operation. P.M.—Lower lobe of right lung gangrenous throughout. Left lung congested. Organs otherwise healthy.

2. Wm. T—, male, æt. 80. Epithelioma of tongue 2 months, mostly on left side. Mushroom-like in shape, with a distinctly papillomatous surface. Total excision of tongue. Progress good except for some rise of temperature until



9th day after operation, when patient became very weak and died. P.M.—Both lungs engorged with blood, and show whitish necrotic areas, one of which had already broken down. Some hæmorrhages also scattered about the lungs, which were throughout very soft and feeble. Some senile inflammatory change in kidneys. No secondary deposits.

3. A. G. E—, male, æt. 60. Removal of tongue, gland, and portion of jaw. Death from exhaustion in 5 days. No P.M.

*Lip.*—Males 9. C. 9. Lower in all. Glands involved 5; excision in all; glands removed 5.

*Cheek.*—Male 1, females 3. C. 3, U. 1. Internal surface 1; external surface 3. In scar of lupus 1; excised 1; jaw involved 1; no operation 1.

*Glands.*—Males 13. C. 5, R. 1, U. 4, D. 2. Previous epithelioma of tongue 9; penis 1; lip 1; possible carcinoma of œsophagus 1; second recurrence 2; immunity for 5 years 1.

*Treatment.*—Excision 6; attempted excision 1; ligature of common carotid 1.

*Fatal cases.*

1. E. H. M—, male, æt. 60. Excision of tongue 3 months previously. Secondary glands of neck and recurrence in tongue noticed about 2 months. Glands enlarged along both sterno-mastoids. Gradual emaciation and death on 18th day. P.M.—Tongue and floor of mouth extensively infiltrated. In the anterior wall of right ventricle of the heart was a secondary epitheliomatous deposit the size of a pigeon's egg. Externally this had not penetrated the visceral layer of pericardium, but the interior of ventricle presented rough shaggy surface, on which lay clotted blood. On section mass was yellow-white in colour and fibrous in consistence. Specimen in museum.

2. R. S—, male, æt. 74. Amputation of penis for epithelioma 5 months previously. Glands appeared in groins 2 months previously. Considerable mass of glands. Excision. Glands undergoing degeneration. Vomiting constant after operation for 2 days with epigastric pain. Syncopic attack on 8th day after operation, followed by another in 2 days, which latter attack was complicated with hæmatemesis and followed by death. P.M.—Stomach contained blood-stained fluid, but was otherwise healthy. On posterior wall of first part of duodenum was an ulcer the size of a florin, having for its floor the head of the pancreas, and exposing a branch of the hepatic artery, which was eroded and had given rise to the hæmorrhage. Edges of ulcer slightly hard, but the ulcer was not malignant. Remainder of intestinal tract healthy.

*Palate.*—Males 3. C. 1, U. 2. Glands involved 2; excision of growth with glands 1; excision 1; recurrence in hospital 1.

*Alveolar border.*—Males 3. C. 1, U. 2. Jaw involved 1; gland involved 1; excision with fracture of jaw 1; refused operation 1.

*Œsophagus.*—Males 6. R. 2, U. 2, D. 2. Three inches below cricoid 1; near cricoid 4; situation ? 1; glands involved 5; loss of voice 1.

*Treatment.*—Gastrostomy 1; tracheotomy 1; attempted removal of glands 2.

*Fatal cases.*

1. A. H—, male, æt. 49. Voice husky 6 weeks. Tumour of neck (right) 5 weeks. Dysphagia 3 weeks. Loss of voice 3 days. On admission, hard tumour of neck situated behind lower part of sterno-mastoid. Right pupil smaller than

left. Attempted removal of growth. Abandoned, as tumour was intimately connected with vessels of neck and too adherent. Anæsthetic taken badly. Respiration ceased. Tracheotomy. Death in few hours. P.M.—At 3 inches from glottis nodular projection of growth into œsophagus, below which projection is a fungating ulcer. Both ulcer and projection are continuous with a large growth situated outside the œsophagus, displacing the trachea to the left and bulging its lumen. This growth is the same as that in the neck. No secondary deposits.

2. T. W—, male, æt. 52. Tumour removed from neck 1 month previously that proved to be epithelioma. No symptoms at that time of œsophageal disease. Tumour recurred. Patient readmitted. Marked emaciation. Swallowing of fluids alone possible. Œsophageal tube passed to feed patient experienced obstruction at level of cricoid. Death on 30th day. P.M.—A pedunculated, kidney-shaped growth, measuring  $2\frac{1}{2} \times 1\frac{1}{4}$  inches, found springing from the anterior wall of œsophagus on level with cricoid. Tumour white, firm, and fibrous on section. Cystic degeneration in secondary mass in neck. Right lobar pneumonia.

*Penis.*—Males 4. C. 2, R. 1, U. 1. Phimosis 2; prepuce mostly affected 1.

*Treatment.*—Amputation in front of scrotum 2; excision of growth 1 (this recurred and was readmitted), discharged at own request.

*Penis, recurrent.*—Interval since operation 9 months, 1; 1 month, 1 (previous excision of growth). Re-amputation in front of scrotum with castration 1, amputation in front of scrotum 1.

*Rodent ulcer.*—Males 2, females 5. C. 6, U. 1. Outer canthus 1; nose 1; forehead 2; orbit 1; cheek 1; malar bone 1. Duration in years: 1, 3, 6, 7, 14, 15, 18.

*Treatment.*—Excision 5; zinc chloride 1; grafted 2.

*Rodent ulcer, recurrent.*—Male 1, females 1. C. 2. Removal 5 years, 2 years, and 1 year previously 1; 3 years previously 1. Excision in both.

*Sarcoma.*

*Sarcoma of lip; general sarcomatosis.*—J. L—, male, æt. 57. Family history good. Growth removed from forehead 2 years previously. Pimple on lower lip (skin) 3 months. Received blow on lip, after which tumour began to enlarge and discharge, and to be accompanied by pain. Tumour size of florin on lower lip, very hard, of dusky colour, and but little raised above the skin. No tenderness. Two other tumours of skin on flank and thigh, the skin being slightly reddened over them. Excision of growth of lip. Wound healed. Discharged on 18th day.

*Traumatic, round-celled sarcoma of orbit.*—F. R. P—, male, æt. 11, school-boy. Family history good. Fell down 20 weeks previously with poker in hand, and inflicted a blow on his left upper orbital margin with the hot end of the poker. Tissues gradually swelled, so that at end of second week patient could hardly see out of eye. Puncture of swelling produced nothing. Three weeks later swelling incised and a quantity of black blood escaped. Wound never healed, and week before admission noticed discharge from left nostril. On admission a fungating mass projects from upper part of orbit through the

original incision. Eye quite hidden in œdematous lids, while it was proptosed and displaced down. A probe impinged on bad bone in the orbital roof. An unhealthy ulcer of thigh caused by incision for abscess. A portion of growth removed proved to be round-celled sarcoma. 11th day, attempted excision of growth. Dura mater found exposed and superior maxilla involved. 31st day, swelling appeared in right thigh just below gluteal fold. Growth recurred in orbit. Discharged unrelieved on 41st day.

*Small round-celled sarcoma of septum nasi.*—C. B—, female, æt. 49, married. Discharge from nose 3 years. Tumour of septum 6 weeks. On admission, flattened tumour on both sides of septum, completely blocking both nostrils. Nose turned up. Growth excised; nose sutured. Discharged on 16th day. Growth was a small round-celled sarcoma.

*Sarcoma of thigh.*—S. A. S—, female, æt. 49, married. Family history good. Pain, tenderness, and tumour of thigh 5 weeks. Gradual enlargement. Large tumour occupying middle two thirds of left thigh. Unconnected with femur. Skin œdematous, but not reddened. Tender in some places. Painful when patient lies down. Temperature varied about 101° F. Aspiration gave clear serous fluid apparently in loculi. 14th day, femoral artery tied below Poupart's ligament. Amputation at hip-joint by anterior and posterior skin-flaps. Progress good. Discharged on 44th day. Growth was in muscles and inter-muscular planes.

*Recurrent fibro-sarcoma of popliteal space; resection and suture of external popliteal nerve.*—M. D—, female, æt. 11. Family history good. Excision of sarcoma of popliteal space two years previously. Recurrence of growth. Excised when nerve was found involved. Resection of nerve and suture. Two to three inches were removed, the lower point of section below being the neck of the fibula. Leg fully extended before discharge. Section rendered outside of leg and dorsum of foot anæsthetic. Sensation in anæsthetic area totally regained in time.

*Fibro-sarcoma of malar region.*—M. McF—, female, æt. 50, cook. Eighteen months ago present growth commenced as pimple in left malar region. Freely moveable, elastic tumour size of chestnut. Skin just reddened and vessels dilated. Excised. Growth encapsuled. Discharged on 27th day. Growth was a fibro-sarcoma microscopically.

*Alveolar pigmented sarcoma of sole of foot.*—S. A. T—, female, æt. 33, married. Family history good. Eighteen months previously sole of right foot wounded by stone on sea beach. Wound was 1" long. Poisoned by stocking, but soon healed. Twelve months ago scar became painful and began to swell, and at same time glands enlarged in groin. Both swellings increased in size till 6 months ago, when the swelling on sole of foot was the size of a walnut, and deep purple in colour, and was removed by ligature. Under treatment wound seemed inclined to heal, but the glands in groin enlarged steadily. Five months ago there was only a small red "lump" at seat of wound, which soon began to grow again. One month ago was treated with ointment by the "wise woman of Walworth." On examination there is on the sole of the left foot, just anterior to the heel, a cauliflower-like growth measuring 2" in diameter. The surface is a dusky red, and tuberos, covered with a yellow discharge. The edges overlap

the skin for the extent of  $\frac{1}{2}$ " , so that the pedicle which passes through the cuticle is 1" in diameter. Just anterior to the growth the skin is again deficient, and presents a red granuloma  $\frac{1}{2}$ " in diameter. In the groin is a large mass of softish glands covered by discoloured skin, while in the pelvis just above this mass is a hard mass the size of an egg. A piece of the growth from the sole presented the characters of an alveolar sarcoma, with some pigment granules in the cells. Amputation advised, but refused. Discharged on 17th day.

*Periosteal sarcoma of humerus.*—R. R—, female, æt. 25, married. Family history good. Pain in arm 6 weeks. Attended as out-patient, as pain was so severe. Tumour appeared 4 weeks. Pot. Iod. no effect. Tumour of right humerus rather below middle of shaft, growing from anterior, external, and posterior surfaces. Spindle-shaped. Skiagram showed osseous projection from humerus at lower border of tumour. Amputation refused. Discharged on 39th day.

*Small spindle-celled sarcoma of femur.*—J. P—, male, æt. 42. Paperhanger. Family history good. Pain in knee 4 months. Enlargement of lower end of right femur 6 weeks. Inability to extend leg 1 month. Pain severe, especially at night. Large, tense, fluctuating swelling lower end of right femur. Skin red and hot. Leg flexed to right angle. Synovitis of knee. 18th day, amputation of thigh in upper third. Discharged on 39th day. Tumour sprang from periosteum, and bulged into knee-joint. Medulla involved. Microscopically, a small spindle-celled sarcoma.

*Spindle-celled sarcoma of tibia.*—G. H—, male, æt. 16. Vanguard. Family history good. Kick by horse on inner side of left tibia just below the knee 5 months previously, followed in 14 days by a swelling in this situation. Tumour of upper end of tibia, mostly affecting the inner side. Soft, fluctuating, with slight pulsation. Bone felt deficient at edge of tumour. Amputation of thigh in lower third on 7th day. Discharged on 29th day. Microscopically, a spindle-celled sarcoma.

*Cavernous round-celled sarcoma of leg and tibia.*—G. T—, male, æt. 27. Stoker. Fifteen years previously received a blow on the most prominent part of the inside of the right calf. After this a tumour appeared, and has persisted up to present time, and if anything decreasing in size. Eight weeks ago received a blow on inner edge of right tibia below the first tumour. The trauma was followed by a swelling intimately connected with the bone. On admission the tumour to first appear had the following characters. It was about 2" in diameter, roughly circular, and somewhat round above the general surface. Gentle pressure caused a marked diminution in bulk, and the tumour refilled in a saltate manner, and then, well full, began to pulsate, but did not exhibit true expansive pulsation. The lower tumour was apparently growing from the centre of the tibia, as distinct edges of the bone could be felt where the growth sprang from it. In this growth there was marked expansile pulsation. Discharged on 9th day. Hæmoptysis commenced 3 days after leaving hospital, and continued up to readmission, which took place in 7 days. Lower tumour increased in size. Dulness at base of right lung. Profuse hæmoptysis. Moist râles and crepitations over part of right chest. Ergotin and morphia administered. Transferred to



Medical side on 9th day. Readmitted to Surgical side in 118 days. No hæmoptysis since leaving hospital, and no abnormal signs were found in lungs on readmission. No alteration in tumours of leg, but a pulsating growth was present in middle of sternum. Amputation through knee on 9th day. Stump suppurated. Secondary hæmorrhage on 16th day. Ligation of popliteal artery. Discharged on 94th day. The upper growth was unconnected with bone, and encapsuled. Microscopically it was a cavernous sarcoma, the cells between the venous spaces being of the large round type. The growth of tibia was of the same variety, and was periosteal, or at least not central, and showed radiating spicules of bone.

*Myeloid of tibia; resection.*—L. D—, female, æt. 19. Eleven months before admission a swelling appeared over upper end of tibia (right). Five months later swelling was incised and granulation tissue scraped out, as the origin appeared to be tuberculous. Microscopic examination showed this to be merely granulation tissue. Patient discharged. Readmitted again in 4 months with recurrence of swelling. This appeared to project from the anterior or inner surface of the tibia, and was somewhat painful on palpation, with slight reddening of the skin. No pulsation. A portion removed proved to be myeloid sarcoma. Resection of upper end of tibia, so that only thin portion of the posterior surface was left. Joint cartilage was perforated in the operation in one place, but others were left intact. Hæmorrhage was severe, and patient died of shock a few hours after operation. P.M.—Growth was completely removed. No secondary growths.

#### SIMPLE TUMOURS.

*Duct papilloma of breast.*—J. C—, female, æt. 72, single. Watery discharge from right nipple for 35 years. Pain and a darkening of discharge 6 years. Tumour for 3 years. On admission small tumour beneath outer and lower part of areola. Nipple retracted, and represented by a granular mass. Amputation of breast. Discharged on 31st day. Tumour pronounced by pathologist to be a duct papilloma.

*Myxoma of cord.*—T. J. Y—, male, æt. 44, schoolmaster. Suffered from hoarseness for 10 years. Three years previously a tumour was discovered on right vocal cord. Repeated removal of portions of growth up to 17 months ago by the intra-laryngeal method. By laryngoscopic examination the right cord was replaced by a soft translucent body the size of an almond, which moved with phonation towards the left vocal cord. On the left false cord there was a small pedunculated fibroma. The voice was reduced to a whisper, but there was no dyspnœa. 8th day, preliminary tracheotomy followed by thyrotomy. Thyroid cartilage required saw. Tumour removed with portion of right cord; excision of pedunculated fibroma. Raw surfaces touched with thermo-cautery. Tracheotomy tube removed 10th day. Discharged on 25th day, when the voice was gruff and hoarse, but much stronger than before operation.

*Adenoma of superior maxilla.*—A. T—, female, æt. 32, married. Has had four healthy children. No history of new growth in family. Twelve years previously, while in the sixth month of pregnancy, a small sore place was noticed on the left



side of the hard palate. In 6 months' time it had grown so large as to form a dark, protruding mass, which broke down and came away in pieces. After this it partially healed, but broke down again at each succeeding confinement. Twelve months before admission a fleshy mass came away from left nostril, which has been practically blocked since then, while a blood-stained discharge is fairly constant. Six months later the left cheek began to swell, and the left eye became more prominent than its fellow. There has been pain in left superior maxilla, but this has not been a prominent symptom. On admission there was a growth fungating through the hard palate from about  $\frac{1}{2}$ " from its outer extremity, and passing back into the soft palate, but limited to left side. It was distinctly but little raised, lobulated on the surface, elastic to the feel, fleshy and almost œdematous to the eye, and suggested a non-malignant growth. Beneath left malar bone is a tense prominence, over which the skin is non-adherent. Left eye proptosed and pushed up, while the movements into ear canthus are limited. Left nostril blocked. No glands. 21st day, excision of superior maxilla with all processes. Removal of growth piecemeal. Wound healed well. No recurrence. Patient developed extensive tuberculous mischief of right lung, and died on 77th day. The growth was very minutely cystic, the epithelium being flat. It was non-malignant in character.

*Fibro-myoma of uterus.*—Females. C. 1, U. 3, D. 1. At own request 1; operation not advised 1; left without leave 1; extra-peritoneal hysterectomy 1.

*Fibro-myoma of uterus; hysterectomy.*—E. R—, female, æt. 42, cook. Gradual increase in size of abdomen 3 years. More rapid increase 3 months. Menstruation regular. Sudden pain in left thigh and swelling of that limb 8 days. On examination much subcutaneous fat. Abdomen distended by a large, hard, dull tumour, central in situation, and reaching to costal angle. Œdema and swelling of left lower extremity. Girth at umbilicus 51 inches. Some albuminuria. Cœliotomy. Hysterectomy by flaps. Stump treated intra-peritoneally. Shock. Infusion of 3 pints of saline. Death. P.M.—Only thin elongated cervix left. Pelvic veins thrombosed, as was also left deep femoral. Organs very fatty. Cortices of kidneys showed yellow striation.

*Plexiform neuroma of thigh.*—B. B—, female, æt. 21, single. "Purple spot" removed from inner side of thigh when two years old. Operation did not totally remove tumour. Two years ago tumour began to swell and became painful, the pain passing down inner side of thigh to ankle. A large, soft, nodular, flattened tumour situate on inner side of right thigh, and reaching up to the labium. Surface crossed by a cicatrix, while the skin was much puckered. Tumour presented many hard, nodular masses, which were excessively tender to the touch. Excision on 15th day. Discharged on 53rd day. At operation tumour ran up through the deep fasciæ to the obturator foramen. The mass consisted of cords of fibrous tissue about one eighth of an inch in diameter, intricately coiled on themselves, and these were the hard, tender nodules felt before operation.

*Sacro-coccygeal tumour.*—B. W—, male, æt. 3. Patient has been in hospital several times, but operation was not then thought advisable. The tumour was noticed at birth, and has increased slowly in size, but not in proportion to the growth of the patient. On examination a large bilobed tumour in sacro-

coccygeal region, measuring about 16 inches in circumference at its base. Partly solid and partly fluid, and translucent. Left side more solid than right. Prolongation passing up between sacrum and rectum for distance of 3 inches from anus. 26th day, tumour tapped and 33 oz. of albuminous fluid withdrawn; this did not, however, diminish the size of the tumour high up between sacrum and rectum, and only reduced that of the external swelling. 40th day, tumour refilled. 41st day, tapping repeated and 18 oz. of fluid evacuated. Cyst again filled up, but seemed harder and more nodular than before. 48th day, skin raised from tumour, which shelled out. Infusion of saline fluid and brandy into deep veins of thigh during operation, as great shock quickly occurred as tumour was being separated. This was again repeated after operation. The growth was removed in two separate parts. On examination it was found that there was yet another tumour between sacrum and rectum high up in the pelvis. This was left *in situ*. Child rapidly recovered, and was discharged cured on 89th day.

*Description of tumour.*—The growth was found on section to consist of cysts and narrow elongated spaces contained in masses of fibrous tissue, which at places reached a considerable bulk. One large cyst formed the greater part of the external tumour, and was the cavity which had been tapped. Into this space projected a lobulated, almost foliated growth, which, however, the microscope showed to consist of fibrous tissue only. Of the remaining cysts some were lined by a columnar ciliated epithelium, others by a squamous epithelium, and contained hair and enclosed caseous contents.

## CYSTS.

### *Hydatid.*

1. G. T. B—, male, æt. 35, clerk. Hydatid of hip. Swelling just behind great trochanter 5 years; has increased but little in size. Two previous tapplings. Excised through a 2" incision. Daughter cysts and hydatid membrane extracted. Discharged on 19th day.

2. H. H—, male, æt. 36. Master mariner. Hydatid of pelvis. Sciatica seven years previously. Constipation 3 years. Tumour above pubes 2 years. On admission, hard tumour the size of a cocoa-nut, occupying right iliac, and partly the hypogastric regions. Fixed deeply in pelvis. Flanks resonant. *Per rectum* mass felt adherent to right side of pelvis. Rectum displaced to left. 8th day, incision in mid-line between umbilicus and pubes. Peritoneum not seen. Tumour exposed. Bladder defined by catheter, and found pushed to the left. Steel sound would not pass on account of obstruction along urethra. Tumour separated down to pelvic bone in iliac fossa. Tumour felt elastic. Tapped, but only few drachms of fluid escaped. Wound enlarged upwards. Peritoneum opened. Intestine found adherent to top of tumour. Peritoneum sutured. Attempted removal of piece of growth (before abandoning operation) caused escape of hydatid membrane. Hole enlarged, and many daughter cysts escaped. Fibrous wall nearly 1" in thickness. Cysts and membrane evacuated. Finger introduced found bare bone on internal aspect of pelvis opposite acetabulum. Fibrous cyst stitched to skin. Drainage. In the course of a few days many more cysts escaped. Discharged with sinus on 64th day.

3. W. W—, female, æt. 29. Housework. Hydatid of liver. Small, hard gradually enlarging tumour beneath right costal margin 3 years. Painful latterly, especially when stooping. Large globular swelling in right lumbar and hypogastric regions, while below this but continuous with it a hard, small swelling could be felt. Tumour dulness continuous with seat of liver, which comes 1" below costal margin. Abdomen opened in mid-line. Globular swelling in free edge of right lobe of liver, which was enlarged, and composed most of the tumour felt through the abdominal wall. Tapped; nothing withdrawn. Wall incised, and a stiff, gelatinous fluid and small daughter cysts evacuated. Wall  $\frac{1}{3}$ " thick. Adventitious cyst stitched to abdominal wound and plugged. Discharged on 88th day.

4. C. R—, female, æt. 60. Married. Hydatid of abdomen (calcareous). Tumour at umbilicus since  $1\frac{1}{2}$  years old, caused by blow. No trouble with it till 2 days before admission, when it became painful and began to discharge. Tumour in abdomen the size of a large orange situated behind umbilicus, but more to the right than the left. Adherent to abdominal wall. Sinus discharged thick yellow pus, which contained cholesterine crystals. Exploration. Pieces of hydatid membrane evacuated. Walls of cyst contained calcareous plates. Cavity plugged. Discharge offensive. Washed out with peroxide of hydrogen. Discharged on 53rd day with a sinus.

*Ovarian cysts.*—Females 8. C. 7, D. 1. Double 1; twisted pedicle and hæmorrhage into cyst 1. Multilocular in all. Firm adhesions in 1. Hæmorrhage into cyst 1.

*Fatal case.*—A. H—, female, æt. 20. Multilocular ovarian. Two years ago suffered from "inflamed ovary." On inspection abdomen retracted, but otherwise normal. Enlarged ovary felt in pelvis. Cœliotomy on 4th day. Left ovary enlarged and cystic. Removal. Patient was never in good condition from operation. Temperature rose to  $101.8^{\circ}$  F. Abdominal wound suppurated. Vomiting; distension of abdomen. Sunken eyes. Incision in left iliac fossa; sero-pus evacuated; drainage. Death on 19th day. P.M.—General septic peritonitis. Loculated pus. Ligature used to pedicle found in small abscess cavity in Douglas's pouch. Primary wound granulating. Small hæmorrhagic infarcts in lower lobes of lungs.

*Suppurating ovarian cyst and intra-pelvic abscess.*—A. W—, female, æt. 37, no occupation. History of abdominal pain and pelvic peritonitis for 2 years, necessitating confinement to bed several times. Admitted with an abdominal tumour situated in left iliac, lumbar, umbilical, and hypogastric regions, and encroaching on the right side. Abdominal distension. Tumour dull on percussion over nearly its whole extent. Well-marked thrill. *Per vaginam*, mass in Douglas's pouch and depression of left fornix. Pelvic tumour connected with that in the abdomen. Temperature a little raised. 6th day, cœliotomy in mid-line between umbilicus and pubes. Intra-peritoneal abscess evacuated. Tumour in Douglas's pouch still present. Incision and escape of offensive mucoid matter. Enucleation not thought advisable. Drainage of cyst. Partial closure of abdominal incision. Gradual improvement. Some discharge of pus from rectum and bladder. Discharged as cured with small sinus on 87th day. Readmitted with signs of re-collection in pelvis. Much albumen in urine. 12th day, drainage of abscess. Much pus in urine, but no blood. Gradual emaciation. Temperature never

reached 100° F. Death on 37th day from readmission. P.M.—Bladder thickened and adherent to surrounding structure. Matted small intestine in pelvis. Both Fallopian tubes thickened and unevenly dilated, and filled with thick yellow pus. The left opened into abscess cavity, which had smooth walls and reached into iliac fossa when it had been incised. No traces of the ovaries could be found. Appendix healthy. Mixed nephritis. Pleura obliterated. Liver fatty. Spleen enlarged, and showed doubtful lardaceous change in Malpighian tufts.

*Broad ligament cysts.*—Females 3. C. 1, R. 1, U. 1. Readmission 1. Thin-walled cyst 2. Incision and drainage 1. Partial excision 1. Previous removal of right Fallopian tube 1.

*Tumours, nature undetermined.*

*Tumours of liver.*—R. C—, male, æt. 51. Agent. Family history good. Syphilis 7 years ago. Swelling in epigastrium 6 years. Attacks of vomiting, headache, and shortness of breath about 3 times a year. Edema of ankles 2 years previously. Tumour tapped 18 months ago, and a little clear fluid withdrawn. On admission epigastrium occupied by a flat, saucer-like swelling. No fluid obtainable. Elastic. Moved on respiration. Liver reached to midway between umbilicus and symphysis, the whole vertical extent of liver being 11". No tenderness of liver, but surface is nodular. Coeliotomy. Tumour punctured, but only blood obtained. Tumour edge incised, also contiguous portion of liver. Growth presented an anæmic surface that looked like fatty liver or sarcoma. Several more similar tumours found in right lobe. Liver incisions sutured with catgut. Abdominal wound closed. Progress good, except for attack of facial erysipelas. Discharged unrelieved on 37th day.

*Growth of head of pancreas.*—P. E. T—, male, æt. 35. Three years previously patient had an attack of jaundice, which lasted 2 months, after which he lost flesh a good deal. Tumour discovered in epigastrium 12 months previously, when slight jaundice was present. Occasional attacks of vomiting and diarrhœa. Eight weeks previously patient became worse, and came into hospital. On admission tumour dull to percussion in right loin. Small, hard tumour to right of umbilicus, which varied in position, though it does not disappear as it did before admission. Band of resonance (colon?) between it and the liver. Latter organ enlarged, and descends 1½" below ribs. Fairly deep jaundice. Coeliotomy. Tumour apparently in head of pancreas. Right lobe of liver enlarged and somewhat nodular, and formed tumour in loin felt before operation. Abdomen closed. Discharged unrelieved on 22nd day. This growth completely disappeared later on under Pot. Iod. Patient regained normal health, and jaundice disappeared.

## DIGESTIVE SYSTEM.

*Cicatricial contraction of pylorus and duodenum; dilated stomach.*—J. H—, æt. 29, solicitor's clerk. Swallowed 3 oz. of hydrochloric acid 114 days previously. Was in Wandsworth Infirmary for 10 days, after which he went home, taking only liquid food. Soon, however, vomiting began when the stomach was too full. Admitted into Medical ward 5 weeks after the accident.



Some tenderness in epigastric region. Stomach formed a visible tumour in abdomen, and the lower border reached down to umbilicus. Patient improved somewhat with rest in bed and washing out of stomach, but occasionally vomited as much as 2 pints. Improvement not maintained. Operation decided on. Transferred to Surgical side. Cœliotomy in mid-line. Duodenum and pyloric end of stomach appeared contracted and thickened. Anterior wall of stomach incised in long axis; finger introduced. Duodenum would not even admit little finger; this was, however, gradually insinuated and the contracted parts dilated. Stomach wound closed by interrupted and then continuous suture. Abdomen closed. Nutrient enemata. Peptonised milk by mouth on 5th day. Progress good, except for some abdominal distension. Patient expressed himself benefited by operation. No vomiting. Discharged, taking solid food without detriment, on 83rd day.

#### *Hernia.*

*Reducible inguinal*.—Males 126, females 15. C. 128, R. 4, U. 8, D. 1. Congenital 8; funicular 10; encysted 1; recurrent 11. In one recurrent hernia cæcum was uncovered by peritoneum and incised by mistake, and the appendix was found adherent to the cord and excised. Double 5; phthisis 1.

*Treatment*.—Macewen's operation 23; Kocher's 12; Bassini's 1; sac only ablated 10; pillars sewn only 4; ablation of sac and suture of pillars 81; refused operation 5; truss 5.

*Fatal case*.—J. A—, male, æt. 21. Radical cure. Septicæmia. *Vide* Special Table III.

*Irreducible inguinal*.—Males 31, female 1. C. 17, R. 15, D. 1. Congenital 3; funicular 3; recurrent 1.

*Treatment*.—Macewen's operation 1; Kocher 1; sac only 3; ablation of sac and suture of pillars 13; hot bath and ice-bag 14; hot bath and ice-bag followed by radical cure 2; anæsthetic and taxis 1.

*Fatal case*.—T. H—, male, æt. 49. Radical cure. See Special Table III.

*Reducible femoral*.—Male 1, females 9. C. 10. Kocher's method 1; sac ligatured and ablated 2; sac quilted and fascial flap formed 4; truss 1; hernia not seen 1; refused operation 1.

*Irreducible femoral*.—Male 1, females 9. C. 10. Sac ligatured and ablated 5; sac ligatured and ablated, fascial flap formed 2; Kocher's operation 2; nature of operation doubtful 1.

*Strangulated femoral*.—See Special Table I.

*Irreducible umbilical*.—Male 1, female 1. C. 1, D. 1. Obstructed 1. Sac ablated and fascia stitched 2.

*Fatal case*.—E. W—, female, æt. 30. Umbilical hernia 5 years. Many attacks of vomiting for last few weeks. Large hernia, apparently entirely reducible. 16th day, sac opened; much adherent omentum removed after ligature; sac ablated; fascial margins stitched together. Temperature rose to 101° after operation. Much pain in wound. Suppuration. Patient evidently very ill. Much pain in abdomen. Delirium. Temp. 105°. Death on 25th day. P.M.—General septic peritonitis, with 1 pint of sero-pus; wound granulating. Lungs congested and œdematous. Fatty liver.



*Strangulated umbilical.*—See Special Table I.

*Irreducible ventral.*—Male 1, females 10. C. 8, R. 1, U. 1, D. 1. Previous cœliotomy 7; subperitoneal 2; readmission 1.

*Treatment.*—Sac ablated and fascia sewn 7; subperitoneal fat ablated and fascia sewn 2; Bell 1; appendectomy 1.

*Fatal case.*—E. C—, female, æt. 38. Hernia for 6 years. Irreducible 6 days. Vomiting 2 days. Hernia apparently reducible *en masse* through aperture between recti. Radical cure. Small gut matted and adherent. Adhesions separated and gut reduced; sac ablated; peritoneum stitched; fascia drawn together. Peritonitis ensued. Death on 2nd day after operation. P.M.—General septic peritonitis. One coil of small gut deeply congested, with surface covered with thick lymph. Wound dirty and sloughy.

*Strangulated obturator.*—See Special Table I.

*Acute appendicitis.*—Males 4, females 5. C. 8, D. 1. Abscess in fossa 7, loin 1; resulting empyema, residual abscess 1.

*Treatment.*—Incision of abscess 8; cœliotomy and irrigation 1.

*Fatal case.*—Wm. H—, male, æt. 8. Pain in abdomen 3 days. Admitted with rigid abdomen, rapid pulse, and pinched features. Diarrhœa. Some dullness in left flank. Cœliotomy in mid-line; plastic peritonitis. Incision over cæcum; pus evacuated that was not foul or fœcal. Tube inserted into pelvis from iliac wound. Abdomen irrigated. Death on 5th day. P.M.—Peritoneum contained  $1\frac{1}{2}$  pints of thick inoffensive pus. Appendix lay behind cæcum, coiled on itself, so that the tip lay over the pelvic brim. Terminal  $\frac{3}{4}$  of an inch was dilated, gangrenous throughout, and contained two small concretions. Mucous membrane sloughing. There was no attempt at a localised abscess cavity.

*Chronic appendicitis.*—Males 7, females 7. C. 13, U. 1. Interval after 1st attack 4; 2nd attack 3; 4th attack 4; many attacks 2; doubtful 1.

*Treatment.*—Incision adopted: MacBurney's 6, rectus sheath 6, semilunar line 2. Excision of appendix 13. Appendix showed old perforation in 5, catarrhal inflammation 6, old ulceration 2. Concretions found in 2 cases.

*Ileo-cæcal intussusception.*—Males 4. C. 1, D. 3.

Male æt. 10 months. Vomiting and passage of blood and mucus *per rectum* 6 hours previously. No history of accident or diarrhœa. Shock. Rapid, feeble pulse. Rigid abdomen. Sausage-shaped tumour, 4 inches long, occupying position of the descending and transverse colon. Apex of intussusception felt *per rectum*. Rectal inflation reduced tumour from sigmoid flexure, but no further. Cœliotomy. Intussusception drawn out of wound. Gut much congested. Reduction by manipulation. Abdomen closed. Recovery good. Discharged on 29th day.

*Fatal cases.*

*Spontaneous reduction.*—1. H. J—, male, æt. 4 months. Convulsions, vomiting of blood-stained matter, and passage of blood *per rectum* 3 days previously. Admitted in state of collapse. Tumour in left iliac fossa. Intussusception felt in rectum. Condition contraindicated operation. Improvement in 12 hours. Cœliotomy. No intussusception found. Ascending colon and lower portion of ileum found congested. Wound closed. Death from shock in a few hours.

P.M.—Last 2 inches of ileum and first 5 inches of colon, including cæcum, intensely congested, as was also the mesentery. Congestion much marked in ileum and ileo-cæcal valve. Intussusception most probably of the ileo-cæcal variety. Mesenteric glands in affected portion were swollen, but showed no sign of tubercle. No cause for intussusception.

2. A. C—, male, æt. 31, omnibus conductor. Right inguinal hernia as long as he can remember. Severe pain in abdomen 5 days. Constipation 6 days. Vomiting 3 days. On admission tumour to outer side of pubic spine, size of an egg. Sac opened; omentum only found. Abdomen opened; no band or constriction found; cæcum and ascending colon distended; sigmoid collapsed. Appendix removed; omentum in sac ablated. Radical cure by Kocher's method. Abdomen closed. Abdominal distension. Death on 6th day. P.M.—General septic peritonitis of the plastic variety, most intense in right lower quadrant of abdomen. The cæcum and neighbouring 10 inches of the colon were in a marked state of congestion, while the mucosa had sloughed in numerous isolated spots. Gangrenous process had not invaded muscular layer. The ileo-cæcal valve was the highest point affected. As it seemed impossible that the colon could have been implicated in a hernia, the case seemed most likely one of intussusception and spontaneous reduction. Stump of appendix withstood the water test. Abdominal wounds in a sloughing state.

3. E. J—, male, æt. 18 months. Passage of blood *per rectum* 4 days previously. On following day mucus and blood passed. Constipation continued. Child evidently in pain. Two days before admission vomiting and hiccough set in. Abdomen distended and rigid. Visible peristalsis. Intussusception felt *per rectum*. Cœliotomy; reduction. Death shortly after operation. P.M.—Intussusception completely reduced with the exception of small part of cæcum near the appendix. Large gut contained bloody mucus. Cæcum and lower part of ileum intensely inflamed. Mesenteric glands swollen. Organs healthy.

*Matting of small gut; intestinal obstruction.*—S. S—, female, æt. 40. Removal by intra-peritoneal method of fibroid of uterus in Adelaide 15 days previously. Progress of case good until 3 days before admission to Surgical side, when patient was seized with pain in abdomen and vomiting, which soon became stercoraceous. Cœliotomy through old incision. Small intestine found much matted in pelvis with firm adhesions. Adhesions separated with fingers and scissors. Abdomen closed. Progress good, the bowels being opened naturally until the 12th day after operation, when temperature rose and vomiting again occurred. Death on 14th day after second operation. P.M.—Acute general suppurative peritonitis. No definite ante-mortem perforation found. Peritonitis possibly due to extension from suppurating abdominal incision.

*Tuberculous peritonitis.*—Male 1, females 5. R. 3, D. 3. Irrigation 2; cœliotomy, no fluid, abdomen closed, 1.

#### *Fatal cases.*

1. H. D. C—, female, æt. 28 months. Fæcal fistula. Contracted diphtheria. Tracheotomy. Death. P.M.—Membrane in bronchial tubes. Broncho-pneumonia.

2. F. B—, female, æt. 6. Admitted with history of swollen abdomen since birth, and of a previous operation (2 months ago) for present complaint. One month previously wound broke down and discharged. Discharging sinus at

umbilicus. Sinus opened up and found communicating with large abscess in the abdomen. Irrigated. Wound closed. Union broke down. Discharge re-established, which soon contained yellow intestinal contents. Death on 33rd day. P.M.—All intestines matted together, so that dissection was impossible. Every part streaked with caseous tubercle. Ragged abscess cavity at umbilicus communicated with small bowel. Pericardial sac obliterated by caseous tubercles, which were also present in kidney. Gangrenous cavity in upper part of lower lobe of left lung, with caseous nodules in wall. One bronchial gland broken down.

3. W. G—, male, æt. 20. Illness commenced 8 months previously with pain and swelling at umbilicus. Swelling incised and much pus evacuated. Nature of pus doubtful. More incisions made in lower part of abdomen as temperature fluctuated. Daily irrigation. Closure of most of the wounds. Discharge from hospital. Readmitted with several abdominal sinuses discharging foul mucous pus. Much albumen in urine. Left epididymitis. Prostate enlarged. Discharge of pus from urethra. Urine foul and alkaline. Rigor. Gradual asthenia. Death on 46th day after readmission. P.M.—Omentum adherent generally to abdominal wall. Intestine, stomach, liver, and spleen much matted by fibrous bands containing loculi filled with clear fluid or inspissated pus. Miliary and caseous tubercle in serous membrane. Prostate gland contained three tuberculous abscesses, while the epididymis contained tuberculous pus. Tubal disease in kidneys.

*Ulcerative colitis.*—W. M—, male, æt. 50. Constipation 6 months previously, followed by pain in the rectum, discharge, and occasional hæmorrhage. On admission much emaciation. Examination *per rectum* revealed a roughened, ulcerated condition reaching as far as the finger could feel. No hard edges to ulcer to suggest carcinoma. 6th.—Left inguinal colotomy. Gut here was inflamed and rotten. Pus and mucus discharged from rectum and wound. Temperature between 98° and 102.2°. Gradual emaciation and death on 50th day. P.M.—Whole of large intestine with the cæcum presented extensive ulceration, alternating with narrow bands and islands of swollen but normal mucous membrane. Ulceration had in most part laid bare the circular muscular coat. Peritoneum normal. Small gut showed some congestion, but was otherwise normal.

#### *Cholelithiasis.*

1. *Obstruction of cystic duct.*—E. B—, female, æt. 34. Consulted doctor for frequency of micturition, when an examination revealed presence of tumour of abdomen. No other symptoms. Tumour dull to percussion and displaceable under the ribs. Dulness continued into loin. Urine neutral, 1010; no albumen. Tumour thought to be kidney. Cœliotomy in right semilunar line. Tumour found to be gall-bladder, while the right lobe of liver produced the tumour in the loin. 5½ ounces of clear fluid drawn off. Opening enlarged. Two faceted stones removed. Gall-bladder stitched to abdomen wall. Bile commenced to flow almost immediately. Discharged on 72nd day with biliary fistula. Fæces normal throughout.

2. *Obstruction of hepatic duct.*—E. G—, female, æt. 43. Attacks of biliary colic, vomiting for 18 years, and recurrent jaundice for last 2 years. Fæces have been light-coloured after attacks. Occasional rises of temperature. Liver about

1 inch below costal margin. Hard, small body felt projecting from liver in position of gall-bladder, but resonant on percussion. Impulse through to hand behind loin. Marked jaundice. Cœliotomy. Gall-bladder found small, with hard, thickened walls. Slight quantity of bile-stained fluid withdrawn. Opening enlarged. Small stone, the size of a hazel-nut, extracted by forceps from the duct, and was fractured during extraction. Gall-bladder sutured to aponeurosis. A tumour of colon was noticed, and thought to be fæcal accumulation, and was not further examined. 11th day after operation, jaundice continued; no discharge from wound; fæces normal. 12th day, bile-stained discharge from wound. 13th day, typical attack of biliary colic with vomiting; fæces clay-coloured; only mucoid discharge from wound; no stone found. 20th day, jaundice very slight; urine and fæces normal. Discharged on 41st day.

3. *Obstruction of cystic duct*.—M. J. R—, female, æt. 47. Recurrent jaundice 3 years. Biliary colic and vomiting 18 months. Tumour noticed in abdomen 18 months. On admission tumour in gall-bladder region, tense, continuous over liver, and displaceable upward. Yellow tinge of skin of face. Cœliotomy through rectus sheath. Gall-bladder punctured, and 5 ounces of clear viscid fluid drawn off. Many stones extracted, as well as one impacted in duct, which was some way up, and removed by Volkmann's spoon in pieces. Gall-bladder sutured to wound. Left hospital on 41st day with a fistula discharging 6 ounces of bile. Fæces normal.

4. *Obstruction of cystic duct*.—C. G—, female, æt. 36. Three months' history of tumour in abdomen. No jaundice. No colic. No rise of temperature. Gall-bladder palpable. Cholelithotomy. Stones extracted. Gall-bladder stitched to wound. Discharged on 25th day with a biliary fistula.

5. M. S—, female, æt. 19. History of 5 weeks' pain in abdomen. Liver tender. Biliary colic. Temperature up to  $101\frac{1}{4}^{\circ}$ . Abdomen rigid. All symptoms cleared up with rest. Nature of case doubtful.

#### GENITO-URINARY SYSTEM.

*Stricture*.—Males 47. C. 38, R. 1, U. 3, D 5. History of trauma in 2. Discharged at own request 3.

*Situation*.—Penile 8; penile and membranous 5; penile bulbous 1; membranous 1; penile and bulbous 2; bulbo-membranous 3; bulbous 7; membranous 17; meatal and bulbous 1; doubtful 1.

*Complication*.—Retention 6; fistula 3; hæmaturia 1; abscess 2; extravasation of urine 4.

*Treatment*.—Dilatation 34; external urethrotomy 2; internal urethrotomy 1; incision 6; Cock's perinæal puncture 2.

#### *Fatal cases.*

1. G. W—, male, æt. 40. Stricture many years. Admitted comatose. Bulbous stricture. Death in 24 hours. P.M.—Urethra sloughing. Acute ulcerated cystitis. Suppurative and tubal nephritis. Dilated ureters.

2. A. D—, male, æt. 38. Admitted comatose with extravasation of urine. Stricture in penile urethra, impermeable to small catheter. Much swelling of



scrotum and lower part of abdomen. Multiple incisions. Urethra found ruptured in membranous portion. Boracic bath on third day up to time of death. Wounds became clean, but patient remained comatose and restless, and died on the 18th day. P.M.—Hæmorrhagic cystitis with much fasciculation of bladder. Both ureters and right kidney dilated. Double pyelitis. Suppuration in the cellular tissue around the bladder, and signs of early general peritonitis.

3. W. F—, male, æt. 54. Three months' difficulty of micturition. Admitted with retention due to membranous stricture. Urine drawn off with catheter. Pain in abdomen. Suppression of urine. Death on 6th day. P.M.—Bladder completely filled pelvis, and the wall was three eighths of an inch thick. Some fasciculation. Mucous membrane of a purple colour. Ureters dilated with pelvis of kidney, there being but little kidney substance left, so that it was wonderful how life was maintained.

4. G. W—, male, æt. 40, labourer. Stricture many years. One week difficulty of micturition increased. Catheter given by doctor to pass on himself. Passage of catheter followed by bleeding. At the end of one week patient became drowsy, and was sent up to hospital. Admitted comatose, and died in a few hours. P.M.—Bulbous stricture and cystitis. Acute suppurative nephritis, right.

5. E. B—, male, æt. 60. Stricture 4 years. Femoral abscess 2 days. Membranous stricture. Dilatation. Rigors and suppression of urine, which passed off, but returned and proved fatal on 13th day. P.M.—Granular kidneys. Caseous tubercle in lungs.

*Enlarged prostate*.—Males 7. C. 1, R. 4, D. 2. Stricture 1; retention 3; hæmaturia 1; cystitis 3; supra-pubic cystotomy 3.

*Fatal cases.*

1. G. W—, male, æt. 68. History 18 months. Supra-pubic cystotomy. Temp. 105°. Death on 12th day. P.M.—Cystitis; cystic kidney; left basal pneumonia; obsolete tubercle of lung.

2. W. W—, male, æt. 84. Four days' retention of urine. Cystitis. Supra-pubic cystotomy. Died of exhaustion on 13th day. P.M.—Cystitis; pyelitis; gall-stones.

*Extravasation of urine*.—G. K—, male, æt. 52, clerk. External urethrectomy 14 years ago for stricture. Four days' difficulty of micturition. Swelling of penis one day. On examination, No. 10 catheter enters bladder. No definite stricture found. Abscess in angle between penis and scrotum. Inferior part of scrotum œdematous. Penis turgid, especially glans, which was black-purple. Incision in scrotum evacuated urinous fluid. Small incisions into glans revealed clotting of the spaces. 2nd day, sloughing well marked in glans. Cock's puncture to avoid necessity of frequent dressings. Death. No P.M.

*Moveable kidney*.—Females 10. C. 6, R. 1, U. 3. Readmission 1; right 9; left 1; displaceable into iliac fossa 4; lumbar nephrorrhaphy 6; belt 1.

*Renal calculus*.—Males 8, females 2. C. 8, U. 1, D. 1. Hæmaturia 3, albuminuria 7; lumbar pain only 6; colic 1; calcium oxalate and phosphate 1; uric acid and oxalate 1; oxalate 3; uric acid 4; stones multiple 4; hydro-nephrosis 1; pyonephrosis 1; lumbar nephrolithotomy 9.



*Fatal case.*—Wm. C—, male, æt. 29. Left lumbar nephrolithotomy 8 months previously. Lumbar tumour reappeared. Left lumbar nephrolithotomy. Two faceted uric acid calculi extracted, and half-pint of blood-stained urinous fluid evacuated from dilated kidney. Hæmorrhage. No vessel could be seen, wound plugged; temperature rose to 103·4°. Vomiting. Plugs removed on 4th day after operation. Hæmorrhage recurred. Whole of dilated kidney packed with gauze. Infusion into veins of 3 pints of saline fluid. Patient never rallied. Death on 4th day after operation. P.M.—Right kidney hypertrophied. Left kidney converted into a hydronephrosis measuring 6 inches in diameter. Wall composed of fibrous tissue except at the top, where a thin layer of kidney substance still remained. Ureter dilated so that circumference measured 1 inch. Source of hæmorrhage not found. One small stone found left behind in sac. Miliary tubercle of lungs.

*Hydronephrosis.*—Males 2, female 1.

In female case, due possibly to moveable kidney, nephrectomy after two tapplings had failed.

*Traumatic.*—1. J. W—, male, æt. 43, gas-stoker. Admitted into hospital after being run over by pony-cart 37 days previously. Discharged on 14th day, no symptoms of injury to kidney being present. Remained in Wandsworth Infirmary until readmission. Tumour in left loin, reaching from eighth rib to umbilicus, and thence to Poupart's ligament. Dulness over tumour continued into loin. Surface smooth. Tense with well-marked thrill. Urine normal. 5th day, aspiration yielded 5 pints of urinous fluid. 14th day, incision in loin. Eight pints of fluid evacuated. Kidney found pushed forward and uninjured. Walls of cyst very thin and subperitoneal in front. Tube inserted. Discharged cured on 56th day.

2. C. D. P—, male, æt. 22 months. Kicked by a horse in abdomen one month previously. One week later swelling in left side of abdomen, which increased up to admission. On examination a large, dull, ovoid swelling in left lumbar region, reaching from under costal margin in the iliac fossa, and extending to within 1 inch of umbilicus, the anterior edge leaving costal margin at 9th costal cartilage, and reaching below the inner third of Poupart's ligament. Tumour fluctuated and gave a distinct thrill. No hæmaturia. Incision in left loin. Sixty-one ounces of bloody fluid evacuated. Kidney could not be felt. Drainage. Temperature rose after operation, and continued raised throughout child's stay. At first it varied through five degrees, but gradually fell, so that when child was discharged it only rose a degree at night. No pus was found in spite of exploration. Antistreptococcic serum had little or no effect. Sinus gradually closed after discharging serum for 64 days, but was still open when patient left. A hæmorrhagic, erythematous rash appeared on the 69th day, but disappeared in a few days. Antistreptococcic injection was discontinued some days before appearance of rash. Discharged on 159th day in good condition.

*Pyonephrosis.*—Males 1, females 2. C. 1, R. 1, D. 1. Lumbar nephrectomy 2. Due to stricture in the male.

*Diabetes.*—L. B—, female, æt. 20, single. Admitted with tumour in left loin and history of thirst and sudden pain 13 days. Apparently the patient had suffered from diabetes for some time. Temp. 102·6° F. Tumour size of large

orange on left side below the ribs, long axis running down and forwards. Posterior part extends into loin, but there is resonance behind lower part of tumour. Incision in loin. Inflammatory swelling found connected with the left kidney. Wound packed. Kidney opened 4 days later and pus evacuated. Some inflammation of perinephritic tissues. Sugar in urine, 1760 grains being passed in 24 hours. Pus in urine. On 22nd day after operation fæces were found in wound. Abscess of buttock incised. Fæcal discharge ceased. Buttock abscess healing. Abscess behind knee incised. Urine contained 5480 grains in 24 hours. Discharged unrelieved on 62nd day.

*Fatal case.*—L. D—, female, æt. 44. History very indefinite, and extended over 15 years. Admitted with chronic intestinal obstruction which was due to fæcal accumulation. Tumour in right loin thought to be malignant of colon. Emaciation. Death in three days. P.M.—Double pyonephrosis dependent apparently on cystitis.

*Vesical calculus.*—Males 3. C. 1, D. 2. Recurrent with lateral lithotomy one year previously 1; median lithotomy 1; supra-pubic lithotomy 2; uric acid and phosphates 1; calcium and ammonia-magnesium phosphate 1 ( $2\frac{1}{2} \times 1\frac{1}{2}$  inches); oxalates ( $3 \times 1\frac{1}{2}$  inches).

*Fatal cases.*

A. B—, male, æt. 54. Pain and frequency of micturition 6 months. Previous removal of two vesical stones. Urine foul and alkaline. Sound showed presence of stone. Attempted supra-pubic abandoned as peritoneum came too low. Median lithotomy. Stone soft and removed in fragments. Composed mostly of phosphates. Bladder irrigated but continued foul. Perineal wound closed in six weeks. Cystitis continued. Much hæmaturia. Median cystotomy performed for exploration and drainage. Asthenia. Death on 114th day. P.M.—Bladder walls soft and rotten. Mucous membrane covered with pseudo-diphtheritic membrane, which was also present in pelves of kidneys. This latter contained pus and phosphatic grit. Kidney capsules unduly adherent. Cortex not thinned, but cloudy with yellow streaks.

*Enlarged prostate.*—R. C—, male, æt. 83. Difficulty of micturition three years. Retention lately, for which patient was admitted. Supra-pubic cystotomy. Stone  $3 \times 1\frac{1}{2}$  inches, and covered with spicules, removed. Bladder stitched to side of wound. Urine acid, good trace of albumen. Patient gradually sank, and died on 10th day. P.M.—Wall of bladder three quarters of an inch thick. Enormous hypertrophy of prostate. Middle lobe polypoid and 1 inch in diameter. Deep post-prostatic pouch. No sacculation of bladder. Ureters not dilated. Chronic interstitial change in kidneys. Capsules adherent. Cortex studded with small cysts. Œdema of lungs.

*Undescended testis.*—Males 13. C. 10, U. 3. Suture to bottom of scrotum 6; castration 4; radical cure of inguinal hernia 1; testis found lying above and outside external abdominal ring 1; readmission 1.

*Tuberculous testis.*—Males 11. C. 4, R. 6, U. 1. Phthisis 2; castration 6; scraping of tuberculous focus 4; previous excision of opposite testis for tubercle 1; vas infected at point of section 1.

*Hydrocele of tunica vaginalis.*—Males 13. C. 13. Injection of phenol 4; excision 9; hæmatocele excised 1.

*Hydrocele of cord.*—Males 5. C. 5. Excision 4; incised and scraped 1.

*Spermatocele.*—Males 3. C. 3. Excised 3; incision of hæmatocele 1.

*Hypertrophy of breasts.*—Females 3. R. 1, U. 2. Readmission 1.

1. E. K—, female, æt. 15, single. Started 13 months ago, about the time of the occurrence of menstruation. Breasts first began to enlarge naturally, then became hard, tender, and prominent, with some signs of inflammation. Enlargement continued, the breasts becoming more and more pendulous, until at present date the circumferential measurement of the right is 21 inches and that of the left 22 inches, both reaching well down on to abdomen. 43rd day, partial excision of left breast by removal of wedge-shaped portions. Similar operation on the right breast on 106th day. Discharged relieved on 117th day. Portion removed consisted mostly of fibrous tissue, with scattered alveoli of secreting tissue lined by single rows of cells.

2. Female, æt. 22, single. Catamenia commenced at 19 years. At age of 20 breasts, which had developed somewhat, began to increase in size more rapidly, the right more so than the left. The increase commenced with pain, the breasts becoming tender, hard, and prominent. Latterly the organs became soft and pendulous. The left breast might be counted normal in size, but the right is distinctly hypertrophied, and in the upper part can be felt a hard nodular mass the size of a hen's egg, and intimately connected with the breast tissue. Discharged unrelieved on 22nd day. Operation not advised.

*Pelvic peritonitis.*—Females 2. R. 2. Readmission 1. Previous ovariectomy. Cœliotomy; uterus and small gut found matted together. Abdomen closed.

*Chronic interstitial mastitis.*—Females 5. C. 4, U. 1. Amputation of breast 4; cyst present 2; breasts strapped 1.

## VASCULAR SYSTEM.

*Subclavian aneurysm.*—Males 3. C. 1, U. 1, D. 1. Readmission 1.

1. T. G—, male, æt. 44. Cabman. No history of syphilis. 3 days previously noticed swelling at root of neck on right side, accompanied by tingling down the arm, which had been present 1 month. On examination there was a well-marked aneurysm of the third stage of subclavian, rising two inches above the clavicle, but giving no intra-thoracic signs. Right radial pulse small; pupils equal; Pot. Iod. prescribed; pain down arm, necessitating much morphia. 9th day, ligation of first stage of subclavian artery by a vertical incision down the sterno-mastoid and a horizontal incision along clavicle. Pleura was punctured, but no ill effects followed; artery very deep; secured with one floss-silk ligature. Pulsation in sac and radial artery ceased. Wound closed with exception of gauze plug. 12th day, pulsation in aneurysm. Pain in arm still required morphia frequently. 27th day, aneurysm harder; still pulsation, but only doubtfully expansile. Radial pulse very weak. 30th day, ligation of first stage of right, non-pulsating, axillary artery through delto-pectoral space by means of stay-knot of goldbeater's skin. This procedure made but little difference in the pulsation of the aneurysm. 24th day, pain down arm again; No radial pulse. 33rd day, pulsation in aneurysm; no pulse at wrist. 44th day, attempt to ligature on proximal side again. Resection of clavicle at inner end. Sudden hæmorrhage from behind clavicle. Resection of portion



of sternum and first rib. Bleeding seemed to come from an aneurysm in the thorax. Lateral ligature applied. Operation abandoned. Sudden fatal hæmorrhage from wound on 50th day. Surgical wounds were aseptic throughout. P.M.—Aorta and innominate artery much affected with atheroma. Right carotid artery normal, except for some few plates of atheroma. The right subclavian, soon after leaving the innominate, was expanded into an aneurysm the size of a Tangerine orange, reaching partly into the neck and partly into the thorax, and involving all sides of the artery. On the outer surface of this was a layer of fairly recent laminated clot of  $\frac{1}{2}$  inch in thickness. The blood forming this had escaped from a small perforation in the anterior wall of the aneurysm, which appeared to have definite but adventitious walls. After leaving the sac the artery, normal in size, followed its course for a space of 1 inch, and was then again dilated to form the distal or primary aneurysm, which was a little larger in size than the proximal one, and sacculated. The distal aneurysm was cured, being filled throughout by tough, laminated, but coloured fibrin. The axillary artery was normal throughout its course. The floss-silk ligature found in the fibrin inside the primary sac was the ligature that was primarily used to ligate the first stage of the subclavian artery, and whose application caused the second false aneurysm to form by cutting through all the vessel coats. It was possible that the ligature on axillary artery was present but was not seen, as the axillary was cut here on taking it from the body.

2. T. R—, male, æt. 54. Subclavian aneurysm. Ligature. *Vide* 'Med.-Chir. Trans.,' 1897.

*Recurrent popliteal aneurysm.*—W. P—, male, æt. 52. Riveter. History of hard chancre, but no secondary phenomenon. Ligation of superficial femoral artery for aneurysm of left popliteal artery (the swelling being then the size of an egg)  $4\frac{1}{2}$  years ago. Two and a half years ago the aneurysm recurred, when the superficial femoral was tied in Hunter's canal. No benefit accrued, according to the patient, from this operation, and when discharged from hospital remained in an infirmary up to the present time, the swelling gradually increasing in size and accompanied by much pain. On admission the popliteal space and contiguous part of thigh in posterior and lateral aspects was occupied by a non-pulsating tumour, whose greatest circumferential measurement was 20 inches. The consistence was mostly firm, but at the lower and posterior part the skin was reddened, and a soft boggy place suggested suppuration. The leg was greatly flexed. 17th day, amputation through upper third of thigh. Discharged cured on 37th day. On section the aneurysm presented no proper coat, being limited by the muscles, &c., with only the intervention of a very thin, non-separable layer of fibrous tissue. Sac filled with partially decolourised clot, which at aforementioned place was in process of disintegration. The artery could not be traced into sac definitely, though it passed in close apposition to the wall, and was patent here and only locally obliterated at seat of ligature in Hunter's canal. Popliteal surface of femur eroded by the aneurysm, and expanded laterally.

*Senile gangrene.*—F. G—, female (æt. 63 ?), married. Amputation of thigh for senile gangrene last year. (*Vide* Abstract of 1895.) Admitted with gangrene (mummification) of right index and little fingers, and coldness and numbness

of left leg. The gangrenous terminal phalanx of the index finger showed signs of separation by constriction. Discharged unrelieved on 21st day to Infirmary (Lambeth).

*Glycosuric gangrene.*—Males 4, female 1. C. 2, D. 3.

1. E. F.—, male, æt. 70. Right foot became swollen 3 years ago, at which time abscess formed, but the whole affection subsided. Three weeks before admission toes of right foot became black. On admission patient wasted and very feeble. Skin on front of foot black and discoloured as high as ankle-joint line. Gangrene moist. Line of demarcation at ankle-joint well marked in front, but behind there was cellulitis beyond the line. All arteries hard and rigid. Trace of albumen in urine. Sugar varied from 725 grains to 1625 grains; urine from 44 ounces to 81 ounces. Temperature just raised to 100° F. Patient became weaker, and wandered much. Amputation of leg in upper third on 14th day. Little bleeding; tibials much thickened and calcareous. Death from exhaustion on 16th day. P.M.—Flaps showed no signs of union, but were not gangrenous. Femoral clotted from Poupart's ligament to seat of amputation. Microscopic examination showed lumen of artery reduced to less than one third normal size with thickening of intima uniformly through most of circumference, but on one spot there was a distinct projection into lumen. There was little tendency to deposition of calcareous matter. Clot in artery firm and adherent at points, but still coloured deeply and showed invasion by leucocytes. Middle coat not affected by small-cell infiltration, but showed signs of primary calcification.

2. H. L.—, male, æt. 60. Publican. Patient, who had a history of syphilis, was known to suffer from glycosuria for 13 months before admission, but exhibited no other signs of diabetes. Since the discovery of sugar in the urine a diabetic diet has been adhered to. Three weeks before admission a white spot was noticed on the plantar surface of the second toe. Linseed poultices were applied, but as the sore became no better a medical man was consulted, who advised his removal to the hospital. *On admission.*—The second toe of the right foot was in a state of mummification, while at its base the gangrene assumed the moist variety, and a red blush extended on to the dorsum of the foot for about two inches. General condition was fairly good, and patient was well nourished, but of the flabby type. No general arterial disease could be detected. Sugar present in urine, as shown in appended table. Temperature was never above 100° F. during the time patient was under observation. A diabetic diet, with toast and gluten bread, was maintained while patient was in hospital as before. Foot was dressed with antiseptics, but fluctuation was detected on the dorsum of foot on the 4th day, and an incision evacuated thin pus. On the 11th day the gangrene was slowly spreading to the third toe, while no attempt at a line of demarcation was formed. As no improvement was manifested, the chance of amputation was offered and accepted. This leg was accordingly amputated by the circular method in the lower third of the thigh. There was very little bleeding indeed. Wound practically healed by first intention, and patient left the hospital on the 49th day. The amount of sugar practically remained as before. Both tibial arteries much reduced in lumen, as was also the femoral. The increase in thickness of wall was due to increase in the subendothelial lining, the middle coat showing only a few patches of small round cells.



	Sp. gr.		Sp. gr.	Grs. to oz.		Oz. of urine.		Total sugar.
July 22.—1040	...	1038	...	2	...	48	...	96
„ 23.—1036	...	1030	...	6	...	68	...	408
„ 24.—1040	...	1016	...	24	...	73	...	1752
„ 26.—1042	...	1020	...	22	...	78	...	1716
„ 27.—1040	...	1016	...	24	...	65	...	1560
„ 28.—1036	...	1020	...	16	...	47	...	752
„ 29.—1040	...	1010	...	30	...	53	...	1590
„ 31.—1040	...	1018	...	22	...	29	...	638
Aug. 4.—1030	...	1016	...	14	...	71	...	994
„ 5.—1032	...	1022	...	10	...	74	...	740
„ 6.—1030	...	1028	...	2	...	52	...	104
„ 7.—1030	...	1016	...	14	...	64	...	896
„ 13.—1040	...	1018	...	22	...	44	...	968
„ 14.—1042	...	1020	...	20	...	56	...	803
„ 15.—1042	...	1016	...	26	...	52	...	1352
„ 16.—1042	...	1018	...	24	...	68	...	1637
„ 17.—1042	...	1016	...	26	...	41	...	1066
„ 18.—1040	...	1024	...	16	...	62	...	992
„ 19.—1040	...	1012	...	28	...	63	...	1764
„ 21.—1042	...	1020	...	22	...	52	...	1144
„ 23.—1042	...	1018	...	24	...	67	...	1608
„ 25.—1044	...	1014	...	30	...	56	...	1680
„ 26.—1038	...	1020	...	18	...	60	...	1080
„ 30.—1034	...	1014	...	20	...	46	...	920
„ 31.—1036	...	1020	...	16	...	75	...	1200

Note from patient's medical man thirteen months later said that patient was well and about on crutches, but still suffered from temporary glycosuria relieved by a special diet.

3. E. F—, male, æt. 70, engineer. Three years previously several abscesses appeared on the left foot, and were accompanied by darkening of the skin. Abscess healed, and foot remained well, except for some weakness, until 3 weeks before admission, when the skin over the toes of left foot became dark. On admission, emaciation. Skin of left foot as high as ankle-joint black or discoloured with blots on surface. Well-marked line of demarcation at level of ankle-joint in front, but ill defined behind. Skin beyond knee much inflamed. Temp. 100·4°. Arteries at wrist hard, as are also the femorals. Sugar and trace of albumen in urine. Boracic bath to foot. Patient became weaker and weaker. No rise of temperature. 14th day, amputation in upper third of leg. Long posterior flap cut by transfixion. Arteries extremely calcareous, very little bleeding. Patient gradually sank and died. Sugar varied from 1796 grs. to 725 grs. in 24 hours, and the daily amount of urine from 44 oz. to 81 oz. Temperature never rose above 100° F. P.M.—Organs much decomposed. No sign of union in flaps. Femoral artery grossly diseased from Poupert's ligament, being stiff and inelastic, and clotted throughout. Wall fairly uniformly thickened. Lumen much narrowed. Many calcareous plates. Both tibials presented some change, but these together with lower part of femoral showed extreme narrowing of lumen. Right kidney atrophic. Both cortices narrowed. Showed fibrous

scars, possibly due to syphilis, of which there were no other evidences in body. Microscopic examination of arteries.

4. H. J—, male, æt. 77. Corn on sole of foot over head of first metatarsal 5 years. Gradual excoriation until small deep ulcer was formed, which compelled patient to give up work 1 year previously. Seven weeks ago the great toe became gradually black and painless. On admission the great toe was in state of dry gangrene up to the middle of the proximal phalanx. On the ball of the great toe was a large, unhealthy, sloughy ulcer, which also extended outwards over the heads of the 2nd, 3rd, and 4th metatarsal bones. There was also another unhealthy ulcer on the inner side of the heel. The skin of the whole foot is bad ashy colour where it does not show signs of cellulitis, which is most marked on the dorsum. Discharge was blood-stained, and dreadfully offensive. Urine contains sugar, the greatest amount in 24 hours being only 47 oz. No other signs of diabetes. Both tibial arteries pulsating, but very hard to the feel. Temperature normal. Amputation in lower third of leg. Patient never rallied, and died on 3rd day after operation. P.M.—Pancreas firm but not atrophied. Valves of heart atheromatous, with calcareous plates. Coronary arteries calcified. Aorta dilated and atheromatous. Microscopic sections of posterior tibial artery showed an endarteritis almost producing obliteration, while in the newly formed tissue were large calcareous plates. Middle coat but little altered. Femoral artery atheromatous, but not markedly reduced in lumen.

5. M. S—, female, æt. 48. Sore place noticed on foot 14 days previously. No cause could be assigned. Incision and evacuation of some pus. Urine 5 days before admission showed albumen, but no sugar. On admission a cachectic-looking woman with unhealthy ulcer on inner side of foot and sole on right side, while over the calcaneo-cuboid articulation was a black slough. Sugar and albumen in urine. In spite of incisions and bath treatment the ulcers spread, and presented a dirty sloughy appearance, and gave off a most offensive smell. On the 10th day emphysematous crackling noticed in calf. Incisions in this situation revealed black sloughs. Restlessness. Delirium. Death. There was no attempt to throw off the sloughs or initiate a healthy action in the wounds. Temperature throughout was but little raised, and only once reached 100·8° F. The amount of urine varied from 103 oz. to 24 oz. in the 24 hours; the sp. gr. from 1029 to 1019; the total sugar from 1067 grs. to 196 grs. No P.M.

*Albuminuric gangrene.*—A. G—, male, æt. 39, bootmaker. Admitted into St. Bartholomew's Hospital in January, 1893, for spontaneous dry gangrene of right second toe, which separated spontaneously. Both tibials pulsated, and no general actual disease could be made out, but circulation was feeble. The urine contained a trace of albumen. Patient was readmitted in 1895 with a similar condition of the left foot, which commenced with sudden pain in second toe. No further light was thrown on the case. Discharged unrelieved. Admitted into St. Thomas's in April, 1896. No mention in notes of syphilis. Toes of left foot continued to become more and more gangrenous after leaving St. Bartholomew's. Right foot healed. All the toes and the anterior part of the dorsum of the left foot in state of dry gangrene. The line of demarcation, which was an ulcer of unhealthy appearance, crossed the mid-point of the metatarsal bones. Pulsation could be detected with difficulty in both tibial arteries. No general arterial disease could be made out, but circulation was very weak. Left leg was colder than

right. Urine 1020, acid, contained half albumen. Marked optic neuritis, fundus studded with white patches. Discharged unrelieved on 9th day. Temperature varied between 98° and 100·4° F. Patient died in King's College Hospital on May 19th, 1896, of septic poisoning due to infection of gangrene. No P.M.

*Septic gangrene.*—J. A—, male, æt. 42, bill-poster. Pott's fracture three years previously, which had been troublesome and swollen ever since, and 5 days before admission became red and painful. Admitted with skin of foot purple and swollen. Incision on dorsum and about malleoli only evacuated blood-stained serum. Toes anæsthetic. Temp. 103°. Condition bad. No attempt at line of demarcation. No sugar, but trace of albumen in urine. 3rd day, amputation of leg in upper third. Temperature dropped only to rise again. Signs of pneumonia. Death on 6th day. No P.M. on account of decomposition.

*Gangrene of toe (? Raynaud's disease).*—J. K. S—, male, æt. 51, law agent. Commenced with darting pains in right big toe 3 weeks ago. Pain increased, and toe became discoloured. On admission great toe was swollen and very painful. Heat relieved pain. Discoloration gradually passed off. Discharged cured on 34th day.

*Hæmorrhage after excision of tonsil.*—E. C—, female, æt. 26, servant. Admitted with general rapid oozing from cut surface of right tonsil. Artery forceps and styptics failed to arrest bleeding. Ligature of common carotid near bifurcation within twelve hours of excision. Hæmorrhage immediately ceased. Discharged cured on 12th day.

#### THYROID.

*Parenchymatous goitre.*—Male 1, females 8. C. 3, R. 5, U. 1. Stridor in 1; dysphagia 2; loss of voice 1; increase in fibrous constituents 1.

*Treatment.*—Thyroid extract 4 and marked in 1; isthmus excised 1; lobe 2; leeches and Leiter's tubes 1.

*Adenoma.*—Females 4. C. 2, R. 1, U. 1. Excision 2; hæmorrhagic degeneration 1; tonic treatment 1.

*Cysts.*—Male 1, females 2. C. 3. Thick-walled 3; cholesterine in 2; shelled out 3.

#### ARTICULAR SYSTEM.

*Shoulder.*—*Tuberculous arthritis.*—Males 3, females 2. R. 4, D. 1. Senile tubercle 1; caries sicca 1; plaster splint 2; rest 3.

*Fatal case.*—*Senile tuberculosis of shoulder; enlarged prostate; atony of bladder.*—Frequency of micturition 1 year. Swelling of right shoulder 6 weeks with pain and limitation of movement. On admission bladder distended to 2" above umbilicus. Right shoulder uniformly enlarged, and down the bicipital groove ran a prolongation of this enlargement, which pitted on pressure, while the skin was reddened. Two pints of urine drawn off gradually. 2nd day, similar quantity of urine evacuated. A few ounces of urine passed normally. Urine contained blood. Condition of true atony of bladder present. Bladder irrigated. Death from asthenia on 32nd day. P.M.—Right shoulder distended with thin, offensive pus. Articular cartilage almost entirely disappeared, while remainder was a mere slough. Head of bone carious. Bladder immensely dilated and hypertrophied. Inner surface rugose. Mucosa studded with hæmorrhages, and

of a general slaty tint. Middle lobe of prostate projects as a pedunculated tumour the size of a Tangerine orange, completely blocking the urethra. Lateral lobes of prostate also enlarged. Double pyonephrosis. Kidney substance reduced to a thin layer of cortex. Growth at flexion of left elbow, apparently a fibroma on the median nerve, and showed scattered hæmorrhages through its substance.

*Elbow.*—*Tuberculous arthritis.*—Males 2, females 5. C. 1, R. 6. Family history of tubercle 2; ganglion of wrist 1; sinus 3; tuberculous ankle 1.

*Treatment.*—Arthrectomy 3; sinus scraped 2; sequestrotomy of humerus 1; of olecranon 1; of tibia 1.

*Ankylosis.*—Females 2. R. 2. Gonorrhœal 1; fibrous 2; massage 2.

*Wrist.*—*Tuberculous arthritis.*—Males 4, females 2. C. 3, R. 3. Trauma 1; ganglion of wrist 4 years 1; caries of carpus 1.

*Treatment.*—Langenbeck's excision 2; excision by transverse incision 1; arthrotomy 1; arthrectomy 1.

*Hip.*—*Tuberculous arthritis.*—Males 22, females 34. C. 1, R. 48, U. 2, D. 6. Family history of tubercle 18; trauma 1; necrosis of femur 1; dorsal dislocation 2; meningitis 1; cerebral abscess 1; caries of pelvis 1.

*Treatment.*—Anterior arthrectomy 4; anterior excision 6; incision and suture of abscess 4; incision and drainage of abscess 7; sequestrotomy 2; posterior excision 2; scraping of sinus 7; reduction of dorsal dislocation 1; amputation by Furneaux Jordan's method 1; in upper third of thigh 1. Remainder by rest, extension, and Thomas's splint or plaster of Paris.

#### *Fatal cases.*

J. B—, male, æt. 14. Pain in right hip 6 months. Treated by rest. No relief. Admitted into hospital, great pain on movement of hip. Formation of abscess on front of thigh. Abscess incised, irrigated, and sutured. Wound broke down. Pus discharged. Excision of head of femur. Acetabulum much diseased. Temperature became hectic, and patient lost ground. Irrigation of wounds every morning. Lumbar abscess incised. Signs of pleurisy and tuberculosis of left lung. Œdema of right leg and foot followed by similar affection of left leg. Temperature still raised and fluctuating. Emaciation. Death on 220th day. P.M.—Upper fourth of femoral shaft bare and carious. Acetabulum represented by a patch of carious bone 3" square. Right femoral vein filled with recent adherent clot, which continued into right iliac vein, but was here breaking down into a brown, puriform fluid. This clot had reached the inferior extremity of the vena cava, and had proceeded a short way down the left common iliac vein without completely blocking the lumen. Flat, caseous tubercles on surface of left lung. Left pleura contained 1 pint of puriform fluid. Right lung œdematous, left lung compressed. No other disease in lungs. Liver fatty, no lardaceous change.

*Tuberculous hip; cerebral abscess.*—1. A. C—, female, æt. 11, waif. Tuberculous right knee 3 years, right hip 2 years. Excision of hip 2 years ago. Much swelling and many sinuses about the right hip. 4th day, sinuses scraped. 36th day, albumen in urine, which gradually increased. 108th day, circular amputation of thigh in upper third preparatory to disarticulation of femur. Distinct improvement. Albumen not found in urine. Sinuses scraped. 259th day, sudden occurrence of epileptiform fits involving both sides of body, but principally



the right side. Patient quite unconscious. After a few hours patient had a fit of similar character, followed by 2 hours' coma, during which there were frequent muscular twitchings of right side, and occasionally of left side. Distinct right facial paralysis and right hemiplegia. Optic neuritis doubtful. Repeated vomiting. 260th day, speech thick, but patient coherent. 262nd day, two more fits. Semi-comatose in intervals. Temperature above normal. Aphasia (motor) more marked. Deepening of coma. Death on 269th day. P.M.—Much emaciation; only small patch of caseous bone on pelvis to the inner side of acetabulum. Upper end of femur extensively diseased. Extreme atrophy of upper end of femur, medulla filled by diffuent red material. Caseous tubercle of left lung. Liver and spleen distinctly lardaceous. Some bulging of left motor convolutions, beneath which an abscess was found lying  $\frac{1}{2}$ " deep, containing 3 to 4 oz. of yellow curdy pus. Abscess extended down to the roof of the lateral ventricle, but had not communicated with it. Brain tissue around abscess was the seat of white softening. No meningitis, no tubercle.

2. M. M—, female, æt. 25. Tuberculous hip 4 years. Previous incision of abscesses. Admitted with sinuses. 32nd day, sinuses freely scraped. 51st day, erysipelas of thigh, starting from sinuses. Transferred back to general ward 59th day. Formation of fresh sinuses, no attempt at improvement. No albumen in urine. Amputation at hip by Furneaux Jordan's method. Great shock. Injection of 4 pints of saline. Death from shock on 118th day. P.M.—Caseous tubercle in lungs. Heart flabby. Liver fatty. Kidneys swollen, cortex enlarged and fatty, capsules moderately adherent.

3. W. B—, male, æt. 2 years. Anterior excision. Gradual emaciation. Death from caseous broncho-pneumonia.

4. C. O'L—, male, æt. 13. Nine years' history, both hips involved. Double abscess, incision and drainage. Temperature rose, and patient gradually sank and died. No P.M.

*Ankylosis.*—Males 6. C. 3, R. 2, U. 1. Fibrous 2; osseous 4; tuberculous 4; gonorrhœal 1; cause? 1; ankylosis of knee 1; caries of femur 1; subtrochanteric osteotomy 2; Macewen's 1; scraping of femur 1; massage 1.

*Knee.*—*Tuberculous arthritis.*—Males 20, females 13. Family history of tubercle 14. Trauma 3. C. 10, R. 22, D. 1. Marrant Baker's cyst 1.

*Treatment.*—Excision 6; arthrectomy 3; localised arthrectomy 1; excision and amputation of thigh 1; amputation of thigh 3; arthrotomy and suture 3; incision of abscess 1; excision of Marrant Baker's cyst 1; lateral irons 1; remainder by plaster-of-Paris splints.

*Fatal case.*—W. G—, male, æt. 47. Attacked with sudden pain in knee 11 months previously, followed by effusion. Treated with plaster-of-Paris splint. Admitted with swollen knee exhibiting a fluctuating swelling on inner side. Pain and limitation of movement, and some backward displacement. Excision of knee. Much disease. Patella left. Joint suppurated, requiring some incisions. Extensive tuberculous disease of left lung developed at right apex. Death on 52nd day. P.M.—Right basal empyema, containing 8 ounces. Old tubercle at right apex, with scattered yellow tubercle throughout both lungs. Liver fatty. Resected ends of bone showed definite tuberculous foci. No bony union.

*Ankylosis.*—Males 6, females 3. C. 2, R. 7. Fibrous 5; osseous 4; flexion and malposition 1; multiple 1.



*Causation.*—Syphilitic epiphysitis 1; previous excision 1; pyæmia 1; tubercle 1; gonorrhœal 2; cause ? 3.

*Treatment.*—Osteotomy of femur 1; massage 1; forcible movement 3; amputation of thigh 1; high boot 1; plaster-of-Paris splint 1; excision of metatarsal phalangeal joint 1.

*Loose bodies.*—Males 2. C. 1, U. 1. Indefinite trauma 1; body visible through skin 2; locking of joint 1; arthrotomy and extraction 1; articular cartilage (1 inch  $\times$   $\frac{3}{4}$  inch) 1.

*Dislocated semilunar.*—Males 5. C. 3, R. 2. Trauma 2; fragment loose in joint 1; attached at one end 2; ruptured coronary ligament 1; locking of joint 3; swelling visible 3; arthrotomy and excision 2. Arthrotomy and extraction 1.

*Ankle—tuberculous arthritis.*—Males 10, females 2. C. 2, R. 10. Family history of tubercle 5; tarsus involved 2; previous excision 1; caries of fibula 1.

*Treatment.*—Anterior excision 2; arthrectomy by multiple incisions 1; sinus scraped 1; fibula scraped 1; remainder plaster-of-Paris splint and rest.

*Suppurative arthritis.*—Male 1. C. 1. Cause? Elbow and shoulder also involved; arthrotomy of shoulder, elbow, ankle; arthrectomy of ankle.

*Sacro-iliac joint—tuberculous arthritis.*—Male 1, female 1, R. 2. Arthrectomy of joint through ilium 1; scraping of ilium 1; abscess 2.

## AUDITORY SYSTEM.

*Mastoid abscess.—Fatal cases.*

*Otitis media suppurativa; mastoid abscess; meningitis.*—Wm. H—, male, æt. 6 months. Swelling behind left ear two days. No history of discharge. Temp. 102°. Incision, pus evacuated. 10th day, mastoid antrum opened. Cavity plugged. Temperature rose to 104°. Some discharge from ear. 19th day, condition suddenly became worse. Fits. Pulse almost imperceptible. Temp. 109°. Infra-jugular vein tied. Lateral sinus explored, but bled freely. Death. P.M.—Mastoid well opened. Outer part of petrous bone infiltrated with pus. Lateral sinus contained recent healthy clot. Meningitis of base and vertex with petechial extravasations. No pyæmia.

*Otitis media suppurativa; mastoid abscess; extra-dural abscess.*—J. M—, male, æt. 5 months. Discharge from left ear 2 months before admission. 4 days before admission discharge ceased and abscess appeared behind left ear. Temp. 103°. Abscess incised. Mastoid antrum opened on 3rd day. Pus evacuated. No alteration; death on 4th day. Temperature reached 107° before death. P.M.—Mastoid bone infiltrated with pus. Extra-dural abscess on posterior surface of petrous bone just in front of sinus, which was normal.

*Otitis media suppurativa; mastoid abscess.*—1. F. T. D—, male, æt. 6 months. Stacke's operation. Fatal from diarrhœa and intestinal catarrh.

2. M. E—, male, æt. 1 year. Mastoid opened. Fatal from general tuberculosis of lungs and basal tuberculous meningitis.

*Mastoid abscess and septic thrombosis of lateral sinus.*—1. E. B—, female, æt. 14. Discharge from right ear 2 years. Six days before admission increase of pain in ear with rigor, followed on three successive days with three successive rigors. Temp. 103°. Jugular vein tied. Right mastoid freely opened; pus evacuated

from antrum. Temperature remained normal until 15th day, when it rose suddenly to 104°. Right optic neuritis. 17th day, lateral sinus exposed, and found almost plugged with white clot; tegmen tympani intact. 34th day, pulse irregular, varied between 60 and 120; some vomiting; inclination to drowsiness; exploration of right cerebellum and temporo-sphenoidal lobes; nothing found. 54th day, paresis of right arm and face, with partial aphasia noticed. More inclination to coma; hydrocephalic cry. Cerebellum and temporo-sphenoidal lobes re-explored without result. Temperature between 97° and 104·8°. Epileptiform fit confined to right arm, face, neck, thorax. Eyes turned up to the right. Patient comatose. 56th day, trephining over left motor area; evacuation of much pus between dura and brain. Death on 57th day. P.M.—Longitudinal and both lateral sinuses as far as their genua full of thick, grey, foul pus. Both genua plugged with recent ante-mortem clot. All large veins on both hemispheres were filled with decolourised adherent clot. Petrosal and cavernous sinuses free. On the surface of left hemisphere lay a collection of pus measuring 5 inches × 2 inches. The abscess lay on the surface of the brain, and was remarkably definite in outline. No other part of meninges showed a trace of inflammation. Left middle ear was full of inspissated pus.

2. A. L. D—, female, æt. 9 years. See Special Table III.

*Mastoid abscesses; septic thrombosis of sinus; cerebellar abscess.*—See Special Table III for two cases.

*Otitis media suppurativa; septic thrombosis of sinus; temporo-sphenoidal abscess.*—A. B—, female, æt. 21. Pain in right ear 1 month. Discharge from ear 14 days, followed by shivering fits. Day before admission she had one rigor, and noticed swelling in the right side of neck. On admission drowsy and irritable. Pain over right mastoid. Membrana tympani perforated. Large abscess in neck. Double optic neuritis. Pulse rapid. One rigor. Temp. 103° F. Abscess incised, and found to communicate with sloughing jugular vein, which was filled by septic clot, which extended down to innominate vein, from which clot was scraped, but no bleeding occurred. Antrum opened. Sinus found sloughing and full of septic clot, which was removed, when bleeding occurred from distal end. Irrigation through vein into abscess in neck. After operation temperature fell a little, but the patient remained restless and screamed at times. 3rd day, some improvement. 4th day, patient again torpid. Optic neuritis intense. No lung affection. 5th day, great restlessness. Wound opened up, and more bone removed posteriorly and anteriorly. Dura mater incised. Brain bulged somewhat. Cerebellum and temporo-sphenoidal lobes explored for abscess with trocar; nothing found. Ten c.c. of antistreptococcic serum injected. Restlessness controlled by morphia. 7th day, injection of serum repeated. Left internal strabismus; coma deepening. 8th day, injection again repeated. Temperature rose to 104°. Death. P.M.—Jugular vein below seat of incision in neck filled with healthy clot for distance of 3 inches. No subdural abscess. Lateral sinus alone clotted. Under surface of crura, pons, and cerebellum covered with layer of purulent lymph, which had affected most of cranial nerves. Vertex of brain healthy. A small abscess was present on tip of right temporo-sphenoidal lobe, situated at  $\frac{1}{2}$  inch from surface. A little behind this abscess lay another,

as large as a Barcelona nut, and contained softening red brain matter. Cerebellum healthy. Lungs congested. No evidence of pyæmia anywhere.

A. M—, female, æt. 18, milliner. Purulent discharge from left ear (following a blow) 6 months. Eleven days previously discharge stopped, and patient experienced great pain in the ear and headache, followed by vomiting, frequently repeated, which compelled her to take to her bed, where she had remained up to time of admission. No rigors or fits. *On examination*, severe occipital headache and some retraction of head. Foul pus from left meatus, which was blocked by a polyp. Some tenderness over mastoid. General tenderness over left side of scalp. Pupils equal, small, and reacted to light. Left optic neuritis; condition of right disc doubtful. Mental faculties dulled, but mind quite clear when aroused. Irritability and fretfulness. Right lateral position painful in bed with flexion of limbs, but not of neck. Tongue dry and cracked. Temp. 101°. Pulse 84. Stacke's operation. Antrum caseous and filled with cholesteatomatous matter. Tympanum curetted. Lateral sinus explored, but bled freely. No collection of pus found about petrous bone. Wounds plugged. 2nd day, aggravation of symptoms. Mental condition more irritable. Dressing resented with screams; urine passed into bed. Temp. 102.4°. Pulse 104. 3rd day, no paralysis. Right knee-jerk sluggish, while left was decidedly brisk. Undoubted optic neuritis of both eyes, the left being more marked. Cerebellum explored, but nothing found. Temporo-sphenoidal abscess containing 3 drachms of pus found lying immediately above the left tegmen tympani. Silver drainage-tube inserted. 4th day, some improvement in mental condition. Bed-pan asked for. Pulse 104. Temp. 98°. Very little discharge from tube. Abscess appeared empty. Ten c.c. of antistreptococcic serum injected. 4th day (evening), condition altered for the worse. Great restlessness. Right internal strabismus and slight ptosis of left lid. Nystagmus present in all directions in both eyes. Temp. 102.4°. Pulse 130. Chloral required for restlessness. Pulse became steadily weaker. Cheyne-Stokes respiration. Death on 6th day. Three injections of antistreptococcic serum were given. No P.M.

#### NERVOUS SYSTEM.

*Meningo-myelocoele of lumbar region; cerebral tumour.*—J. F—, male, æt. 20 months. Tumour as large as an orange. Skin perfect but cicatricial. Impulse on coughing. No paralysis. Head large and dolichocephalic. Dermoid cyst over left orbit. 18th day, injection of 1 drachm of Morton's fluid after removal of 9 ounces of fluid. 23rd day, tumour again filled up. Some leakage. Temp. 103° F. Head retracted. Spasmodic movements of limbs. 26th day, sac incised. Pus evacuated. Cord seen to impinge on posterior wall of sac, and the nerves to move forwards. Cavity plugged. Temp. 102° F. Death on 34th day. P.M.—Suppurative meningitis for some distance from sac. Membranes of brain healthy. Tumour the size of a walnut found in posterior and inferior angle of parietal lobe. Hæmorrhage had taken place into its substance. Probably a glioma. No symptoms during life to point to occurrence of cerebral tumour.

## SUMMARY OF INJURIES.

### GENERAL INJURIES.

*Burns.*—Males 18, females 30. C. 22, D. 26. Epilepsy 2.

*Causation.*—Clothes ignited 33; lamp upset 8; hot poker 1; molten iron 1; lamp explosion 2; gas explosion 1; fall into grate 2.

*Treatment.*—Boracic baths 9; Ung. Boracic. 23; vaseline 4; Thiersch grafts 1; remainder by hot lotions, strychnine, and morphia.

*Fatal cases.*

*Under 24 hours.*—Males: 2 years 2, 3½ years 1, 7 years 1. Females: 1½ years 2, 2 years 1, 2½ years 1, 3 years 3, 4 years 2, 27 years 1, 30 years 1, 40 years 1.

*Over 24 hours.*—Males: 7 weeks 1, 3½ years 1, 4 years 1, 9 years 1. Females: 2½ years 1, 3 years 1, 10 years 1, 12 years 1, 37 years 1, 75 years 1.

M. A. G—, female, æt. 27. Burn of thigh and legs (superficial). Boracic bath. Death in 24 hours. P.M.—Liver fatty. Kidneys hyperæmic. Much decomposition.

McC—, male, æt. 4. Clothes caught fire. Burn of chest and arms. Dressed at first with Ung. Boracic., which was changed for boracic bath and lotion. Death on 11th day. P.M.—Left kidney abnormally large. Both kidneys congested; organs otherwise normal.

*Scalds.*—Males 11, females 23. C. 25, D. 11.

*Causation.*—Hot watery fluids 32; hot dripping 1; boiling starch 1; scald of mouth and pharynx 2.

*Treatment.*—Boracic bath 7; Ung. Boracic. 7; tracheotomy 2; remainder hot lotions.

*Fatal cases.*

*Under 24 hours.*—Males: 1 year 1, 1½ years 1. Females: 2 years 1, 2½ years 1.

*Over 24 hours.*—Male: 14 years 1. Females: 9 months 1, 1¾ years 2, 2½ years 2, 4 years 1.

F. W—, male, æt. 12 months. Swallowed hot dripping. Dyspnœa, tracheotomy. Death in 24 hours. P.M.—Upper surface of epiglottis and interior of larynx down to cords lined by grey membrane. Small hæmorrhages in lungs.

E. A. S—, female, æt. 2½. Scald of back, buttocks, and thighs with boiling starch. Death in 2 days. P.M.—Hyperæmia of kidneys and brain. Sub-pericardial petechiæ on posterior surface of heart.



*Concussion.*—Males 80, females 13. C. 89, R. 1, D. 3.

*Complications.*—Scalp wounds 19; wound of face 1; contusion of knee 1; diplopia 1; retention 1; hemiplegia 1; sensory aphasia 1; dislocation of index 1.

*Fatal cases.*

Wm. R—, male, æt. 44. Admitted with concussion. Death in few hours. P.M.—A few punctiform hæmorrhages over vertex. Tubal nephritis. Fatty liver. Miliary and obsolete tubercle in lungs.

*Laceration of brain.*—T. E—, male, æt. 43. Fall 20 feet. Admitted unconscious with loss of corneal reflex and stabile pupils. Skin cold. Died 1 hour after admission. P.M.—Sternum fractured transversely at level of third cartilage. Occipital hæmatoma. No fracture of skull. Some bruising over occipital region of brain. Both frontal lobes extensively lacerated, especially the right. Anterior extremity of right temporo-sphenoidal lobe also extensively bruised. Many small hæmorrhages in substance of brain.

*Fractures of vault of skull.*—Simple. Males 2, female 1. C. 2. D. 1.

*Fatal case.*—F. P—, male, æt. 40. Fall downstairs. Death in a few hours. P.M.—No external sign of injury except some swelling over anterior part of vertex. Effusion of blood  $\frac{1}{4}$  inch thick beneath pericranium. Fissure fracture passing in horizontal direction from right external angular process across the parietal bone to just enter the occipital bone. Some hæmorrhage from pial vessels over right frontal and motor area and tip of left cerebellar hemisphere. No bruising at all of brain substance. Spine normal, except for a little bloody fluid inside and outside the theca.

*Compound depressed fracture of vault.*—Males 4, female 1. C. 5.

*Compound depressed fracture of frontal bone.*—Males 3, female 1. C. 4.

1. E. H—, male, æt. 14. Kicked by a horse. Admitted in semi-unconscious state. Semicircular scalp wound over centre of forehead. Portion of frontal bone, measuring  $\frac{1}{2} \times 1\frac{1}{2}$  inches, was depressed  $\frac{1}{2}$  inch below surrounding bone. Wound cleansed; bone removed with  $\frac{1}{2}$ -inch trephine. Depressed bone removed. Bleeding from dura arrested by a stitch. Some larger fragments of bone replaced. Flaps sutured. Second day temperature rose to  $105^{\circ}$ , and required to be combated with tepid sponging. Sutures taken out; small drain introduced. Third day, temp.  $103^{\circ}$  F. Wound suppurating; loose bone removed from wound. Progress satisfactory until 9th day, when temperature rose to  $101^{\circ}$  F., and patient became almost unconscious, and exhibited paresis of left side of body; conjugate deviation of eyes to the left, with some lateral nystagmus; pupils dilated and sluggish; cornea almost insensible; head retracted and held to left side; no fits or twitchings. Brain explored through wound; nothing found. Consciousness recovered same night; no optic neuritis. Gradual recovery. Discharged on 40th day.

2. E. M—, female, æt. 5. Kicked by a horse. Admitted in drowsy condition with scalp wound of forehead, beneath which was a circular depressed fragment of bone the size of a sixpence. Depression was  $\frac{1}{4}$  inch deep. Depressed fragment raised and ablated; wound sutured. Discharged cured on 13th day.

3. T. T—, male, æt. 35, breaksman. Knocked down by locomotive. Two frontal and one occipital scalp wound. Depressed fracture of frontal bone



beneath right-hand frontal scalp wound. Trephined; opening enlarged; bone removed, a considerable area of the inner table lying loose. Comminuted fracture of scapula and simple fracture of extreme acromial end of clavicle. Progress good except for some restlessness at first, which required sedatives and restraint. Discharged on 20th day.

4. F. S—, male, æt. 10. Fell down and hit head against sharp stone. Scalp wound above left eyebrow. V-depression of bone beneath. No symptoms. Trephining and elevation of fragment. Discharged cured on 16th day.

*Compound depressed fracture of parietal bone.*—W. L—, male, æt. 23, brick-layer. Fall of 20 feet. Unconscious at time of accident, but became rational on reaching hospital. Longitudinal scalp wound, with fracture of inferior angle of parietal bone and squamous portion of temporal. Unconsciousness again supervened. Wound clean and explored. Trephine applied over parietal bone near anterior inferior angle of parietal. Clot discovered and removed. Wound closed. Gradual improvement. Discharged cured on 28th day.

*Fractured base.*—Males 19, females 2. C. 16, R. 1, D. 4. Middle fossa 9; anterior fossa 3; posterior fossa 1; middle and anterior fossa 1. Facial paralysis 3; paralysis of external rectus 2; twitching of face 1; rigidity of arms and legs 1; nystagmus 1. Hæmorrhage from nose 4; from ear 9; mouth 1. Serous fluid from ear 2. Permanent loss of mental faculties 1.

*Fatal cases.*

1. J. H—, male, æt. 40. Fell downstairs backwards. Admitted collapsed and drowsy; bleeding from nose; subconjunctival ecchymosis; left facial paresis; vomiting; pupils equal and reacted. 4th day, patient rational; hearing diminished on left side. 9th day, headache; temp. 103.6° F. 10th day, great restlessness; no sleep; pulse feeble and rapid. Death on 13th day. P.M.—Two fractures; one crossed the right orbital and cribriform plates, opening the sphenoidal sinus; the second fracture started from the inferior anterior angle of right parietal, crossed the groove for middle meningeal to terminate in the foramen lacunum medium. A mass of blood-clot (about 1 ounce) was found to have escaped from middle meningeal. Dura mater in anterior fossa was torn, and had led to suppurative meningitis, most marked in the base.

2. R. C—, male, æt. 50. Fall downstairs. Admitted comatose, with two occipital scalp wounds; pupils contracted and sluggish; hæmorrhage from nose. Temperature rose to 104° F. Death in a few hours. P.M.—Linear fracture of posterior fossa starting from left petrous bone, and extending backwards to the lateral sinus, which was intact. Subdural clot pressing on left side of pons. Hæmorrhage in pia arachnoid, over convexity of vertex, to the thickness of  $\frac{1}{2}$  inch. Some slight laceration of frontal lobes. No rupture of large vessels.

3. F. C. W—, male, æt. 15. Blow by swinging crane against brick wall. Admitted unconscious; blood from nose and mouth; breathing stertorous. Death in few hours. P.M.—Fracture crossed the middle of the left middle fossa, and then traversed the right side of base between the anterior and middle fossæ. Dura mater ruptured. Anterior and posterior halves of base could be moved on one another. Some blood extravasated on base of brain. There was also some bruising of brain matter along line of fracture.

4. G. M—, male, æt. 29. Thrown from cab. Admitted unconscious. Scalp

wound on occiput. Consciousness regained. Vomiting; twitchings of muscles, followed by rigidity of left arm and leg; external strabismus of left eye; spasmodic rigidity of right side. Death.

*Simple fracture of base and vertex.*—Males 5. D. 5.

*Fatal cases.*

1. G. G—, male, æt. 22. Knocked down by a van. Admitted comatose and greatly collapsed. Stimulants. Some return of consciousness. Twitchings of arms and legs with rigidity supervened in a few hours. No definite local symptoms. Temp. 105°; breathing laboured; spasms ceased. Death within 24 hours. P.M.—Simple linear fracture traversed whole breadth of occipital bone, and then turned up for 1 inch into left parietal. Dura mater intact. Nearly whole superficial area of right temporo-sphenoidal lobe for depth of  $\frac{1}{2}$  inch severely lacerated. Rest of brain uninjured.

2. H. G. B—, male, æt. 1 $\frac{3}{4}$ . Fall from window on to head. Admitted unconscious. Death in a few hours, temperature rising to 108° F. P.M.—Extensive bruising of scalp. Numerous fractures; one ran across both parietal bones to enter the squamosal part of petrous bone; another ran back from right parietal bone into the occipital bone, and then into posterior fossa. Sutures of vault were started. A little extra-dural blood. Extensive bruising of vertex to brain.

3. H. B—, male, æt. 24. Fall from ladder on to wooden railing. Admitted comatose, with frontal scalp bleeding from nose and ears. Wound over antero-superior spine, which was also fractured. Progress favorable until 3rd day, when temperature reached 104·8°, and incontinence of urine supervened. Suppression of urine. Purgative failed to act. Death on 4th day. P.M.—Horizontal fracture of frontal bone passing back on both sides under the temporal muscle, and on the right side passing into orbital plate, which was much splintered, and the orbit packed with clot. Extra-dural hæmorrhage over frontal lobes. Cortex of brain lacerated in the left occipital lobe; also small area over posterior surface of left lobe of cerebellum. Right antero-superior spine chipped off. No fracture of true pelvis.

4. A. H—, male, æt. 66. Thrown from hansom cab. Admitted unconscious with stertorous breathing. Bleeding from nose. Following day patient was still unconscious; conjugate deviation of eyes to the left; right buccinator paralysed. Death. P.M.—Right clavicle and all the ribs on same side fractured, some in two places. Right lung congested. Left lung in a state approximating consolidation, possibly due to aspiration pneumonia. Interstitial nephritis. Fracture started from lower part of right parietal bone, and extended across middle fossa, but did not involve the ear. Some bruising of cortex in left hemisphere in parietal and temporo-sphenoidal lobes.

5. P. P—, male, æt. 35. Run over. Died on admission. P.M.—Scalp wound over occiput. Vertical linear fracture of occipital bone into foramen magnum. Intra-dural effusion of blood beneath fracture.

*Compound fracture of base and vertex.*—Male 1, female 1. D. 2.

*Fatal cases.*

1. F. B—, female, æt. 42. Multiple scalp wounds inflicted by a hammer with homicidal intent. Semi-conscious. Fissure fracture of skull. Wound cleaned.

Great restlessness. Temp.  $105^{\circ}$ . Irritability; comatose; limb flaccid; stertorous breathing. Tepid sponging. Death on 7th day. P.M.—Longitudinal linear fracture of right frontal bone running into orbit. Bruising of occipital lobes, which were covered by a thin layer of blood.

2. F. D—, male, æt. 32. Sack of cement fell on head. Admitted with large scalp wound in frontal region, at the bottom of which was a fissure fracture. Patient in an excited condition. Pupils unequal and sluggish. Chloroform administered to dress wound, when patient stopped breathing and could not be revived. P.M.—Fracture extended vertically down into orbit, ending right sphenoidal fissure. Pial vessels everywhere full of blood. Some little extravasation over cerebellum. No bruising or laceration of brain. Second and third ribs on left side fractured. Lung uninjured. Pure slight hypertrophy of left ventricle. No other disease.

*Compound depressed fracture of vertex and base.*

1. E. S—, male, æt. 27, labourer. Blow on forehead with heavy steel bar. Admitted with all symptoms of compression due to compound depressed fracture of frontal bone. Pupils unequal at first, then both widely dilated. Wound explored. Fracture very extensive, and ran into left orbital plate, which was removed in pieces. Dura mater wounded over cribriform plate, and through the aperture some brain matter bulged. Considerable quantity of bone removed. Frontal sinus opened, so that air escaped into cranial cavity. Sinus plugged. 2nd day, temp.  $101.4^{\circ}$ . Pulse 75. Some restlessness. 3rd day, wound healed. Plug in sinus removed. Right pupil widely dilated, and ophthalmoplegia externa complete. Fingers could be counted. Left pupil normal, but patient said he could not see at all with this eye. 11th day, much headache and giddiness complained of. 29th day, right eye complete ptosis. Some action of superior oblique and external rectus, but total paralysis of 3rd nerve as regards muscles and pupil. Vision of right equals fingers at 8 feet. Some impairment of 3rd, 4th, and 6th nerves in left eye. Vision of left eye stated to be unimpaired. Both discs equally pale. Pulsation of veins greatly marked in right, and less so in left. Discharged. Readmitted after 12 days, during which time he had been getting more and more lethargic, and suffered from severe headache. Condition of left eye had not altered. Lethargic state increased until patient passed all evacuations unconsciously. Temperature rose above  $98.4^{\circ}$ , and fell to  $96.4^{\circ}$ . Pulse varied from 56 to 72. Both frontal lobes explored separately with trocar and cannula without result. Death on 12th day after readmission. P.M.—Fracture ran from frontal bone across cribriform plate into right optic foramen, crossing the cavernous sinus. In right frontal lobe, immediately above part of base, lay a chronic abscess, containing 4 oz. of pus. The abscess cavity was shelled out without rupture. Cranial nerves implicated by fracture in right cavernous sinus. Lungs and kidneys congested.

2. *Injury of optic nerve*.—A. K—, male, æt. 9, school. Fall of 40 feet. Admitted unconscious with stable pupils and hæmorrhage from nose and ears. Frontal scalp wound with depression of bone. Frontal scalp flap raised. Triangular depressed piece of bone. Edges cut away; depression raised, but bone left *in situ*. Dura mater found punctured, with some brain matter extruding. 2nd day, patient irritable. Lateral posture. Twitchings of lower extremities. Respiration gasping. 10th day, patient still unstable. Wound suppurating.

13th day, patient rational. Incision made into left eyelid. 24th day, anæsthetic. Incision into left eyelid, much pus evacuated. 27th day, wounds healthy. Patient practically well. 45th day, examination of left fundus. Optic disc white and atrophic. Perception of light still present.

*Fatal case.*—J. L—, male, æt. 36. Fall of 16 feet. Admitted with compound depressed fracture of left frontal bone. Hæmorrhage occurred during administration of anæsthetic, coming apparently from base of skull, and entering into air-passages, so that asphyxia supervened in spite of artificial respiration. P.M.—Fracture ran across from left frontal bone into left orbital plate, thence across the cribriform plate and sella turcica to end in the right jugular foramen. Meninges uninjured. Laceration of left frontal lobe and tip of right occipital. Lungs black, and sodden with blood. Blood also lay in trachea, œsophagus, and air-passages.

*Cut throat.*—Males 8, female 1. C. 6, D. 3. Self-inflicted 9; crico-thyroid space 2; thyroid space 1; thyro-hyoid 4; tracheal space 2; air-passages opened 5.

*Fatal cases.*

1. C. H—, male, æt. 43. Crico-thyroid membrane divided. Sutured. Death on 4th day. P.M.—Bloody fluid in air-passages. Broncho-pneumonia.

2. H. E—, male, 53. Thyro-hyoid membrane divided. Sutured. Death on 8th day. Bloody fluid in air-passages. Lung congested and œdematous. Obsolete tubercle.

3. C. S—, male, æt. 36, clerk. Confirmed alcoholic. A very superficial wound on left side of neck, 2" below angle of jaw. One in similar position on right side. An incision  $1\frac{1}{2}$ " long exposed muscle. Wounds dressed. Sudden asphyxia on 2nd day; found moribund by house officer. Death. P.M.—A tightly-rolled handkerchief found impacted in posterior part of pharynx, which had caused asphyxia. All cavities of heart full of liquid blood. Liver fatty. Kidneys deeply congested.

*Contusions of thorax.*

*Fatal case.*—*Ruptured lung.*—R. L—, male, æt. 17. Run over by omnibus. Admitted much collapsed. Extreme difficulty of breathing. Much sweating. Expectoration of bloody fluid. Death in a few hours. P.M.—Left pleura contained 1 pint of blood together with air at a *plus* pressure. No injury of ribs or parietal pleura. Deep rent on diaphragmatic surface of lung. Lung substance much infiltrated with blood. Right lung healthy except for blood aspirated from left lung.

*Fractured ribs.*—Males 12, females 3. C. 14, D. 1. Subcutaneous emphysema 4; separation of costal cartilage 1; bronchitis and pleurisy 1; hæmothorax 1.

*Fatal case.*—H. A—, male, æt. 7. Run over by a tram. 2nd and 7th ribs fractured, some being compound. Compound fracture of sternal end of clavicle. Death on 4th day. Left lung completely collapsed and coated with lymph. No rupture of lung found.

*Fractured spine.*—Males 5, female 1. C. 1, R. 1, U. 1, D. 3.

1. William S—, male, æt. 47. Fall of 20 feet on to head. Unconscious for short time. Admitted with complete paraplegia of lower limbs. No irregularity



of spines to be made out. Hæmatoma over sacrum. Anæsthesia below following line:—root of penis to junction of inner and middle  $\frac{1}{3}$  of Poupart's ligament, hence to top of great trochanter, and then across buttock to neck of posterior superior spine. The line followed same course on opposite side. Genitals totally anæsthetic, and also perinæum. Retention of urine. Bowels required purgatives. No knee-jerks or plantar reflexes. No plantar or patellar reflexes were ever obtained. Lower limbs remained absolutely paralysed. No spastic contractions. Tap contractions obtainable, but with difficulty. Wasting of muscles well marked. Catheter required three times a day, and only once there was a doubtful gush of urine, as if the bladder would evacuate itself spontaneously, and this just before passage of catheter was due. Fæces passed unconsciously. Distension of bladder sometimes gave pain on discharge. Upper level of anæsthesia had altered, so that in front it passed from the top of great trochanter across the front of the thigh in an ascending direction, so as to meet inner surface of thigh 2" below pubic arch, and on both sides of scrotum was a small lateral patch of feeling continuous with that on the inner side of front of thigh. Discharged on 113th day.

2. A. R—, female, æt. 68. Fall down 6 steps. Sixth cervical spine felt loose and displaced. Gutta-percha splint applied. Rest in bed. Discharged cured on 31st day.

*Fractured spine, 6th and 7th cervical; laminectomy.*—G. B—, male, æt. 40, joiner. Fell a distance of 13 feet on to the back of neck. Irregularity of spinous processes about the 1st dorsal opposite spine of scapula. Intercostal and abdominal muscles paralysed. Breathing diaphragmatic. Complete loss of power in lower limbs. All reflexes below 4th space absent. Retention of urine. Bowels confined. Muscles of shoulder girdle, arms, forearms, and intrinsic muscles of hand act, the grasp of hand being, however, rather weak. Anæsthesia complete below 4th space in front of 3rd dorsal spine behind. No hyperæsthesia, but patient complained of pain down ulnar side of forearm. Penis turgescent. Temperature began to rise, and reached 102° F. by 8 a.m. the next morning. This rise of temperature and its accompanying malaise was repeated many times while patient was in hospital. Turgescence of penis not so marked. 6th day, bowels open for first time by simple enema after ineffectual *Haust. Senna Co.* and *Ol. Ricini* 3j. 9th day, hyperæsthetic band below 2nd rib for space of 1 inch or so, and below this down to 4th space, where absolute anæsthesia still began, was a band of dulled sensation. Some impairment of action of *interossei*. Hyperæsthetic zone on inner side of forearm extending to the wrist. Bedsore commencing on heel and sacrum. 16th day, both knee-jerks returned. Superficial reflexes absent. 18th day, absolute anæsthesia below line drawn between tips of 9th ribs in front. Dulled sensation from 4th space to this line. 19th day, incontinence of urine. Catheter only used once a day as a precaution. 23rd day, twitching of muscles of legs. Abdominal reflexes obtainable. Some cystitis. 32nd day, spontaneous evacuation of bladder. Urine passed in well-marked gushes. Incontinence of fæces. 38th day, sensation has improved, so that a finger tip is felt on foot, but the bottom limit of normal sensation is still 4th space. From this time onwards there was some improvement in sensation both back and front, but all different senses remained poor, and seemed to vary from day to day, so that no real definite areas could be made



out. Spastic contractions of legs, which at first occurred only when legs were touched, became spontaneous, so that on a water-bed the patient's body and legs underwent see-saw movements that were extremely distressing. In the thighs the adductors were especially affected. The wasting of muscles was never marked. 57th day, ankle-clonus present. Tap contractions of muscles of legs distinctly marked. 84th day, voluntary movements present in toes, to slight extent in flexion and extension. 117th day, distension of bladder caused discomfort. Some power of initiating micturition and also preventing the act. Bowels still require castor oil. 130th day, muscles of belly were stronger, and patient could sit up better. 144th day, distinct power of flexion of knees, so that they were raised 4 inches off the bed. Cold produced sensation of stinging in feet, and not cold. 167th day, distinct rigor. Temperature reached 105° F., and remained up for 20 days. No cause. 344th day, intercostals, rectus abdominis, and all muscles of lower limb acted energetically to interrupted current. 384th day, improvement quite ceased. On the whole patient seems going back as regards sensation and motor power. 394th day, both little fingers somewhat anæsthetic, and felt numb to patient, who also complained of a burning feeling just above each internal condyle. Laminectomy. 6th and 7th cervical laminæ removed. Cord not compressed, and seemed normal in size and consistence. 396th day, right palpebral fissure and pupil smaller than left. No proptosis. Under cocaine left pupil dilated more than right, and both palpebral fissures were larger, but the left more so than the right. No affection of blood-vessels or sweating function. 465th day, pressure on abdomen more easily felt than could be accounted for by sensation in skin. Ulnar area in right hand distinctly dull, and limited above by styloid process. Both right and left thenar and hypothenar eminences were wasted. Opposition of thumbs impossible. Abduction good. Ulnar muscles of hands and forearms wasted, the right being more affected than left. 539th day, sensation normal in front to 4th rib or space behind to 3rd dorsal spine. Spastic contraction of top muscles well marked. Urine evacuated in gushes. No control over rectum. Some power as before of flexion of knees and flexion and extension of toes. Attacks of hyperpyrexia less marked than before operation. Discharged to infirmary. No alteration in infirmary, where death occurred from acute bronchitis on 627th day, June 23rd, 1896. Uric acid calculi in both kidneys, which were slightly granular. No pyelitis. Cystitis was also present. On examination it was found that the fracture involved 7th cervical and 1st dorsal vertebræ. The junction between these two formed a sharp angle looking backward. Sixth and 7th cervical laminæ had been removed. Removal of 1st dorsal also would have been better. Cord thin for space of 1 inch. Eighth cervical nerve came from normal cord. First dorsal nerve arose from thin portion. Retention soon gave way to spontaneous evacuations of bladder, which continued up to death, except when patient suffered from febrile attacks, during which dribbling incontinences sometimes occurred. Distension of bladder gave rise to some discomfort, and patient seemed to have some power of starting micturition, and also of holding his water. Incontinence of fæces prevailed throughout, the motions being passed unconsciously. Tendency to bed sore easily combated. No other trophic skin phenomena. Upper line of anæsthesia was hard to define, but seemed to be really 4th space in front and 3rd dorsal space behind. Muscles were remarkably irritable, as shown by their spastic condition,

and the tap wheal-like contractions. No trophic wasting except ulnar muscle of hand and forearm. Superficial reflexes very inconstant throughout.

*Fracture dislocation of cervical spine.*—W. B—, male, æt. 59. Fall from cart on to head. Patient admitted conscious. Anæsthesia below 3rd rib in front passing round to 4th rib in axillæ, from which an area of anæsthesia ran down on to the inner aspect of arm as low as its mid point. Behind anæsthesia commenced as low as midway between spine and angle of scapula. Total paraplegia and absence of reflexes. Retention of urine. Unconscious passage of fæces. Arms slightly abducted. Forearm flexed, hand beside head with thumbs on pillow. Deltoids, supra- and infra-spinati acting, but slightly. Clavicular portion of pectorals with biceps (and brachialis anticus ?) also functional. Some slight power in supinator longus on both sides. Flexors and extensors of wrist and fingers paralysed. Inner side of forearm, back and front, including olecranon and internal condyle and ulnar area of hand, decidedly anæsthetic. Breathing diaphragmatic. Pupils and palpebral fissures equal. Turgescence of penis. Temperature up to 104° F. No change except that breathing became more and more difficult until death on 5th day. P.M.—The 6th cervical vertebra was displaced backwards, so that the lower border compressed the cord. No rupture of bodies. Lamina of 6th vertebra on the left side was fractured and displaced inwards, and so slightly compressed the cord. The 6th cervical nerves were the last to spring from uninjured cord. There was some slight hæmorrhage into upper cervical canal, but the membranes were intact. The cord itself was softened and disorganised opposite the interval between the 6th and 7th bodies. Lungs much congested and oedematous.

J. B—, male, æt. 56. Patient slipped downstairs while carrying water and fell backwards. Great collapse on admission, with tenderness over 5th and 6th cervical spines. Breathing entirely diaphragmatic. Anæsthesia at 3rd rib in front and spine of scapula behind. Sensation was also preserved over the outer aspect of arms as far down as middle of the humerus. All reflexes absent except left plantar. Pupils equal. No narrowing of palpebral fissures. Retention of urine. Unconscious passage of fæces. Left brachialis anticus acted slightly. Right biceps and brachialis anticus act well and move forearm. Deltoids act so as to show fibres, but not sufficiently to move arms. Remaining muscles paralysed. Temperature quickly rose to 105° F., and fluctuated between 101° and 105°. Only change was a retraction of æsthetic area on arms, so that the anæsthesia commenced halfway down deltoids. Death on 5th day without signs of asphyxia. P.M.—Fifth cervical vertebra was prominent anteriorly, and much comminuted. The main fracture started below and anteriorly, and passed back and up to superior surface of 5th cervical, and entered the vertebral disc between 4th and 5th vertebræ. Dura mater intact except just over the left 5th nerve, where a small puncture had occurred; with this exception both 5th nerves were intact to the naked eye. Cord was not compressed by blood or bone, but was soft and pulpy opposite the 5th vertebra. The 5th nerve sprang from part of cord still healthy and firm.

G. C—, male, æt. 42. Struck by a skip weighing 30 cwt., so that his head was driven down between his legs. No loss of consciousness. On admission complete paralysis of legs and loss of lower limb reflexes. Some costal breathing. Anæsthesia complete to groins and partial to umbilicus. Bladder empty. In

course of a few hours absolute anæsthesia reached as high as xiphisternum. Death within 24 hours. P.M.—Fracture about 2nd to 3rd dorsal vertebræ, but decomposition was too far advanced for any satisfactory examination.

*Ruptured diaphragm.*—E. L. M—, female, æt. 4½. Run over by a bottle-van. Admitted in state of collapse. No fluid in abdomen. Catheter evacuated smoky urine. Temperature rose to 102° F. Death in a few hours. P.M.—Slight bruise on abdomen near umbilicus. Right kidney ruptured extra-peritoneally. Slight tear in posterior surface of right lobe of liver; stomach, transverse colon, and great part of small intestine in left pleural cavity, having gained entrance by a rupture of the diaphragm large enough to admit four fingers. Left lung collapsed. No fracture of ribs. No strangulation of herniated intestines.

*Ruptured kidney.*—Males 3, female 1. C. 3, D. 1. Hæmaturia 3. Considerable dullness in left flank 1.

E. M—, male, æt. 9. Fall from cart. Hæmaturia. Catheter appeared to pass through rent in bladder up to umbilicus. Cœliotomy. Bladder intact. Wound closed. Discharged cured on 22nd day.

*Fatal case.*—G. L—, male, æt. 64. Fall of 5 feet on to left side. Admitted collapsed. Hæmaturia. Fractured 7th to 12th ribs on left side. Much troubled by cough. Temperature about 100°. Death on 5th day. P.M.—Few ounces of blood in peritoneum. Both pleural sacs obliterated. Much blood about left kidney, the lower fourth of which was almost completely separated from the remainder. Kidney substance contained a few cysts, but was otherwise normal.

*Ruptured liver.*—Males 2, female 1. D. 3.

*Fatal cases.*

1. H. E. C—, male, æt. 26. Caught between buffers of two railway trucks. Admitted much collapsed; weak pulse; skin cold. Death in a few hours. P.M.—Peritoneum full of blood. Liver completely torn across from back to front just to left of gall-bladder.

2. Wm. B—, male, æt. 28. Fell in front of wheel of a loaded cart, and was dragged along in front of the wheel without its going over his body. Admitted with symptoms of ruptured kidney. 2nd day, signs of free fluid in abdomen, with indications of hæmorrhage. Cœliotomy. Rupture on posterior surface of liver. Blood evacuated from belly. Rupture plugged with cyanide gauze, and the end brought out of abdomen. Infusion of saline fluid into veins. Death on following day. P.M.—Plastic peritonitis in right upper quadrant of abdomen, possibly due to bruising of 4 inches of colon at hepatic flexure. Upper portion of right kidney completely torn away.

3. M. K—, female, æt. 50. Run over across the upper part of abdomen by a hansom cab. Admitted much collapsed. Bruising of abdominal wall over liver area. Fractured ribs on both sides. Left pneumothorax. Shifting dullness in flanks developed in few hours. Still much collapse. Ether and strychnine injected. Death in few hours. P.M.—Much blood in abdomen. Large horizontal rent on anterior or convex surface of liver, involving both lobes, and extending so deeply as to almost reach inferior surface. A large branch of hepatic vein was laid open. 5th and 6th ribs fractured 2 inches from junction with cartilage, the 6th wounding pleura and producing a wound of upper lobe



of the lung, which lay collapsed. 7th and 8th ribs on right side were fractured close to angles.

*Ruptured spleen.*—Males 2. D. 2.

*Fatal cases.*

1. F. H—, male, æt. 5. Run over by an omnibus, the wheel passing over his body. Admitted with great abdominal pain and signs of free fluid in peritoneum. Consciousness retained. Great shock. Death in a few hours. P.M.—Peritoneum contained  $\frac{1}{2}$  pint of blood which had come from a superficial rupture in the anterior edge of the spleen. Intestines and mesentery bruised in several places. 7th, 8th, 9th ribs on left side were fractured in part of angles. Superficial bruising over splenic region.

2. Wm. G—, male, æt. 11. Run over by a cab containing three people. Admitted with signs of great distress and laboured breathing. Distinct difference of note between two sides of chest, the left giving a deeper note. Breath-sounds clearly heard. Abdomen rigid. Shifting dullness in flank and stationary dullness in left flank extending up under the ribs, and reaching as far forward as semilunar line above, and to the antero-superior spine below. No other symptoms of hæmorrhage. Cœliotomy in mid-line below umbilicus; blood in belly. Incision in upper part of left semilunar line. Spleen felt to be ruptured. Incision enlarged transversely. Spleen brought to surface, and found to be almost in two pieces. The line of rupture ran just behind and parallel to ridge on antero-internal surface, so that it only left a bridge  $\frac{1}{2}$  inch in thickness at top of organ. Pedicle transfixed and ligatured. Spleen excised. Wound closed after abdomen had been sponged out. The excised organ was decidedly large. Nothing particular noted as to clotting of blood about spleen. Patient bore operation well, and did well until 16 hours after, when some difficulty of breathing experienced, and patient died 18 hours after operation. P.M.—Left hæmopneumothorax, with 1 pint of free blood in pleura and a little air. A 2-inch laceration on external surface of right lung, and a smaller one ( $\frac{3}{4}$  inch) on outer surface. Both lungs almost completely collapsed. No fracture of ribs.

*Ruptured mesentery.*—Males 2. D. 2.

*Fatal cases.*

1. D. T—, male, æt. 50. Patient was caught between the buffers of two vans. Admitted collapsed. Pulse weak but regular. No dullness in flanks. Percussion gave dull note in right inguinal region, which increased with time, while pulse became weaker. Cœliotomy; much blood in belly; mesentery found ruptured in several places, mostly in a radial direction; large vessel found bleeding. Infusion of 68 ounces of normal saline. Condition improved temporarily, but afterwards patient gradually sank, and died 22 hours after operation. P.M.—Six ounces of fluid blood in peritoneum. Mesentery of the last 4 feet was extensively torn, one large rent being close to spine, and another close to mesenteric border of the gut. The principal rents had been sutured. Ileum attached to ruptured mesentery of a dusky red tint, and at one spot opposite a mesenteric tear had sloughed. Liver fatty. Heart dilated and pale.

2. A. P—, male, æt. 50. Buffer accident? Admitted with great shock, and died in a few hours. P.M.—Bruising on left side of thorax and abdomen. Abdomen contained 4 pints of blood. Mesentery torn in several places, one or

two of which were large enough to admit a man's fist. Some bruising of intestines, but not to any serious extent. On the left side 5th and 6th ribs were fractured near the cartilages, while the pleural cavity contained  $\frac{1}{2}$  pint of blood. Obsolete tubercle in both apices.

*Ruptured small gut.*—W. S—, male, æt. 38, ostler. Kicked by a horse in the belly while cleaning the animal. Unconsciousness supervened, and when patient recovered he vomited. Admitted shortly after accident. No collapse. No bruise, but patient complained of a tender spot just internal to right antero-superior spine. Some impairment of resonance in left flank. General condition indicated no grave lesion. Liver dulness never lost during whole progress. In a few hours patient began to vomit, and the rejected material soon had a fæcal odour. Patient never showed signs of collapse. Eyes sunken. Localised dulness in right iliac region with shifting dulness in flanks. Abdomen opened. Sweet sero-pus evacuated. Rent found in small gut which was transverse to long axis, and involved one third the circumference of the gut, and started from mesenteric border. Rent closed by three rows of Lembert sutures; abdomen sponged out; drainage-tube inserted; abdomen closed. Great shock. Death in 3 hours from operation, and within 24 hours of admission. Temperature rose to 102° F. P.M.—Rent situated 8 feet from pylorus. Closure perfect. General septic peritonitis with lymph, but no fluid.

*Bullet wound of abdomen.*—A. D—, female, æt. 24. Admitted with bullet wound of abdomen 2 inches below the umbilicus and 1 inch to the left of mid-line. Wound was caused by an old army revolver fired within a few feet of patient, who was dressed. Admitted with much shock, which was fatal in a few hours. P.M.—Abdomen contained  $2\frac{1}{2}$  pints of blood and clots. The retro-peritoneal tissue at back of abdomen and in pelvis much infiltrated with blood. Stomach was found perforated through both sides at a point  $1\frac{1}{2}$  inches to the right of its centre, and  $\frac{3}{4}$  inch from greater curvature. The stomach had ascended, so that at the examination the perforation did not correspond to the abdominal wound, though the stomach was lower perhaps than normal. Organ was empty. Small gut perforated at a spot 2 feet from pylorus, where the bullet had made two holes with ragged edges, and again  $2\frac{1}{2}$  feet lower, where a square inch of wall was carried away, though the gut was not actually perforated. Mesentery opposite 4th, 5th, and 6th feet of small gut simply riddled, and many branches of the mesenteric arteries divided. There was a comminuted fracture of the second piece of sacrum, and the bullet was found embedded in the third piece of sacrum.

*Ruptured urethra.*—Males 2. C. 2.

1. Suture of urethra. Urethra took steel sound  $\frac{24}{28}$  on discharge.

2. Perinæal section; catheter tied in; external urethrotomy. Urethra took steel sound  $\frac{30}{30}$  on discharge.

*Fractured pelvis.*—Males 2, female 1. C. 3. Through left pubic ramus and right ileum near sacro-iliac joint 1. Through left pubes and outside left sacro-iliac joint 1. Plaster-of-Paris splint in all.



## INJURIES OF UPPER EXTREMITY.

*Wounds of forearms and hand.*—Males 16, females 6. C. 22. Divided external minimi digiti 1; flexor sublimis 5; external secundi internodii 2; flexor sublimis and profundus 1; external long digitorum 3; external indicis 1; cut radial and secondary hæmorrhage 1; divided radial 1; gun explosion 1.

*Treatment.*—Suture of tendons, ligature of radial artery. Amputation of little finger. Grafting 1.

*Foreign body.*—Needle in hand 4; portion of cartridge case 1. Skiagram taken in 4. Extracted 5.

*Divided median nerve.*—Recent 2; old 2; with division of ulna 1; nerve only half divided 1; immediate suture 2; exploration 1; resection and suture of median 1.

*Divided ulna.*—Recent 2; old 1; radial and internal cutaneous divided also 1; immediate suture 2; freeing of old suture point 1. In one recent case there was no anæsthesia at the end of a week.

*Dislocation of humerus.*—Males 4, females 2. C. 4, U. 2. Subcoracoid 6; reduction under anæsthetic of 5 weeks' duration 1; of few hours' 3. Attempted reduction under anæsthetic 6 months, 3 months' duration; fifth occurrence 1.

*Dislocation of radius and ulna.*—Males 2, females 2. C. 1, R. 3.

*Duration.*—5 months, 7 weeks, 5 weeks, recent 2. Backwards 3; back and in 1; reduction 1; massage 2; forcible movement 1. Skiagram revealed nature of injury very plainly in doubtful case.

*Fracture of scapula.*—Male 1, female 1. C. 2. Fall 1; buffer accident 1; horizontal fracture of blade between upper and middle thirds 1.

*Fractured humerus.*—Males 7, female 1. C. 7, D. 1. Upper third 1; middle third 3; lower third 1; surgical neck 2; T-shaped into elbow 1.

*Treatment.*—Plaster splints 5; Strohmeyer cushion 1.

*Fatal case.*—Male, æt. 72. Fracture lower third, lacerated wound of arm. Tubal nephritis.

*Compound.*—Males 3. C. 2, R. 1. Lower third 3; elbow opened 1; anti-septic and plaster splints 2; continuous irrigation 1; fibrous union only 1.

*Comminuted.*—Arm caught in machinery. Fractures in upper third and lower third. Dislocation of radius and ulna backward, with much rotation of lower fragment on a horizontal antero-posterior axis.

*Compound comminuted fracture of metacarpus.*—Males 2. C. 2. Machinery accident 2; amputation 1; trimming 1.

## INJURIES OF LOWER EXTREMITY.

*Rupture of popliteal artery and vein.*—F. H—, male, æt. 49. Run over the leg by a heavy van. Admitted with great swelling and some contusion of right thigh. No pulse felt below the common femoral. Much collapse. Ether injected. Subsequent restlessness, with increase in size of thigh. Patient did not rally sufficiently to admit of exploratory operation, so deep and superficial femoral arteries were tied in Scarpa's triangle. Incision in lower third of thigh made, and clots evacuated. P.M.—Popliteal space full of blood, which extended down to the surface of the femur, and also upwards along the adductor magnus, whose fibres were greatly torn. The popliteal artery was torn through just as it passed under the tendinous arch in the adductor magnus. Vein was also completely divided. Artery on both sides was pulled out to a point, so that it seems doubtful if any bleeding could have taken place after the accident. Both ends of the artery contained clot. No fracture of femur. Left kidney converted into one large and several small cysts in its upper third, while below it was tough and fibrous. Capsule stripped easily. Both kidneys subject of chronic interstitial nephritis. Heart hypertrophied.

*Foreign body.*—Male 1, females 5. C. 4, R. 2. Needle in foot 3; pin in thigh; needle in leg; extraction in 4; skiagram showed body 3.

*Penetrating wounds of knee.*—Males 3. C. 3. Antiseptics to wound, rest, plaster splints.

*Fractured shaft of femur.*—Males 56, females 13. C. 63, R. 2, D. 4. Direct violence 13; indirect 56; transverse 21; oblique 13. Remainder not stated. Upper third 24; middle third 24; lower third 17; tract of condyle 1; fracture of both condyles 2; tract of stump 1; ankylosis of knee 1; ulcers of leg 1; infantile paralysis 1.

*Treatment.*—Plaster of Paris only 21; plaster and extension 35; Macintyre and plaster 1; extension only 1; Hodgkin and Macintyre 1; Hodgkin 1; ligature of superficial femoral 1; delayed union 5; fibrous union only 1. Shortening noted:  $\frac{1}{2}$  inch 1;  $\frac{3}{4}$  inch 2; 1 inch (including one case where shortening was due to ankylosed knee) 4;  $1\frac{1}{4}$  inches (due to infantile paralysis) 1;  $1\frac{3}{4}$  inches 2;  $1\frac{1}{2}$  inches 1; 2 inches 1;  $4\frac{1}{2}$  inches, previous fracture, 1; "little shortening" 1; wiring of ununited fracture, followed by necrosis and union 1.

*Fatal cases.*

1. C. K—, female, æt. 44. Fracture in lower third. Patient very fat and alcoholic. Death on 9th day. P.M.—Fatty heart.

2. W. W—, male, æt. 70. Fracture in upper third. Death on 13th day. P.M.—Right lobar pneumonia. Free Meckel's diverticulum  $2\frac{1}{2}$  inches from ileo-cæcal valve.

3. E. A. V—, male, æt. 26. Fracture in upper third. Delirium tremens. Death on 3rd day. P.M.—Kidneys large and hyperæmic. Vessels of brain injected.

4. *Rupture of popliteal artery*.—S. A—, male, æt. 40, carman. Run over thigh. Fracture of femur in lower third. Temporary splints. A few hours later foot found cold. No pulse in tibials. Swelling in lower third of thigh. Ligature of superficial femoral in Hunter's canal at centre point of thigh. Clot turned out by incision over seat of fracture. Infusion. Death. P.M.—Femoral artery completely torn across as it passed through adductor magnus.

*Compound fracture of femoral shaft*.—Males 5. C. 3, D. 2. Direct violence 2; indirect violence 3; upper third 1; lower third 4; knee-joint opened 1.

*Treatment*.—Antiseptics 5; plaster splint and extension 2; plaster-of-Paris splint 1; long outside 1; infusion 1; secondary amputation of thigh in middle of shaft 1.

*Fatal cases.*

1. E. F—, male, æt. 26. Fall on to iron girder. Fracture in lower third. Compound also of tibia and fibula. Death in a few hours. P.M.—Organs healthy.

2. H. R—, male, æt. 23. Fall between train and platform. Right femur fractured in upper third, left above condyles; compound in both. Death in a few hours. P.M.—Lungs congested.

*Compound comminuted of femoral shaft*.—Male 1. C. 1. Fractures in middle and lower thirds. Antiseptics. Plaster splints and extension.

*Fractures of femoral neck*.—Males 7, females 8. C. 11, R. 3, D. 1. Impacted 5; unimpacted 10; 1 impacted became unimpacted; unimpacted showed union in 7, and shortening  $\frac{1}{2}$  inch 6; 1 inch 1;  $1\frac{3}{4}$  inches 1;  $3\frac{1}{2}$  inches 1; marked shortening 1.

*Treatment*.—Plaster splint 7; plaster and extension 5; sand-bags and extension 1; double inclined plane 1; sand-bags 1.

*Fatal case*.—W. H. L—, male, æt. 82. Fall on to hip. Unimpacted fracture. Death in 3 days. P.M.—Multiple faceted gall-stones. Cystic kidneys.

*Fracture of patella*.—Males 21, females 5. C. 23, R. 1, U. 2. Right 11; left 14; not stated 1; direct violence 11; indirect violence 14; muscular violence 1; comminuted 2; compound comminuted 1; refracture in 2, 7 months and 64 days previously both wired; old fracture 5, including two previous fractures through same place; previous fracture of opposite side 1.

*Treatment*.—Recent wiring 13; old case wiring 1; adhesions broken down 1; operation not advised 1; remainder by ice-bag and Macintyre and plaster splints, the wire in one case pulled out before patient left hospital.

*Fracture of tibia and fibula*.—Males 53, females 17. C. 70. Right 28, left 38; remainder not stated. Direct violence 8; remainder indirect violence; upper third 2; middle third 4; lower third 51 (including 21 Pott's fractures); remainder tibia and fibula fractured at different levels; lacerated wound of leg 1; fibula comminuted 4.

*Treatment*.—Neville at first 4 (plaster, Neville, plaster 1); remainder by plaster splints.

*Compound fracture of tibia and fibula*.—Males 10, females 5. C. 14, D. 1.

Direct violence 6; indirect 9; middle third 2; lower third 13, including 2 Pott's fractures.

*Treatment.*—Neville splints and plaster 2; Macintyre and plaster 1; continuous irrigation 2; amputation of thigh 2; lower third 1; amputation of leg, upper third 1; remainder by antiseptic and plaster splints.

*Fatal case.*—F. H—, male, æt. 53, cabman. Thrown from dickey of hansom. Admitted with fractured right tibia and fibula, the fibular fracture being compound. Wound cleaned, but soon became septic. Cellulitis at posterior aspect of leg. Continuous irrigation. Some improvement though temperature remained up. Improvement not maintained. Symptoms of septic absorption. Amputation at seat of election. Death two days after amputation, and on 32nd day after admission. P.M.—Stump healthy. Left ventricle of heart dilated. Lungs congested. Liver fatty. Marked tubal disease of kidneys.

H. N—, male, æt. 19, plumber's mate. Fall from roof. Compound fracture of tibia and fibula (right). Rendered compound by protrusion of bones through the skin. Wound cleaned. Neville's splint. 2nd day, temp. 103° F. Condition with this exception good. Fracture examined 7 p.m. and found satisfactory. 3rd day, foot examined at 10 a.m. and found cold and blue. Emphysematous crackling up leg to knee also noted. Amputation of thigh in lower third, after which temperature gradually fell to normal. Amputated leg when punctured emitted much foul gas. All tissues much infiltrated with blood. Discharged cured on 24th day.

*Compound comminuted fracture of tibia and fibula.*—Males 4, females 2. C. 4, D. 2. Right 4; left 2; direct violence 4; upper third 1; middle third 4; lower third 1; compound through ulcers of leg 1.

*Treatment.*—Antiseptics and plaster splints 5; wired 1; secondary amputation of leg one third and two thirds in case with ulcers.

F. H—, male, æt. 36. Fracture in lower third by direct violence. Great splintering of bone, gap between ends of bone of 2½ inches. Splinter placed in medullary canal of lower fragment and wired to upper. Resulted in good position with 1½ inches shortening.

#### *Fatal cases.*

1. E. M—, female, æt. 74. Run over, fracture in middle third. Antiseptics and plaster splint. Death on 3rd day from asthenia with temperature of 104·8°. P.M.—Organs all undersized but otherwise normal.

2. S. W—, female, æt. 2½. Run over by a tram. Fracture in lower third. Compound comminuted fracture of tarsus and metatarsus of opposite side. Death in a few hours.

*Fracture of tibia.*—Males 17, females 3. C. 20. Right 12; left 7; not stated 1. Direct violence 3; indirect violence 17. Upper third 2; middle third 4; lower third 14, including internal malleolus 1; fracture of opposite leg three times 1; Neville 1; remainder by plaster splints.

*Compound fracture of tibia.*—Males 2. C. 2. Right 2; direct violence 2; antiseptic dressing and plaster splints 2.

*Fracture of fibula.*—Males 16, females 9. C. 25. Direct violence 3. Lower

third 25, including 19 Pott's fractures; Macintyre splint followed by plaster splint 1; remainder by plaster splints.

*Fracture of tarsus*.—Males 2. C. 2. Direct violence 2; compound 1; compound comminuted 1; general crush 1; os calcis 1; double 1; double Syme 1; antiseptics 1.

*Fracture of metatarsus*.—Males 2. C. 2. Direct violence 2; amputation of leg in lower third 1; compound comminuted 1.

*Fracture of phalanges*.—Males 3. C. 3. Direct violence 2; indirect 1; amputation of toe 2; boracic bath 1; amputation of phalanges 1.

*Vicious union of femur*.—Males 3. C. 2, U. 1. Upper third 3. Interval since fracture 8 weeks, 3 months, 14 months. Osteotomy 1; disruption of fracture 1; plaster splint 1.



## SPECIAL TABLES.

## SPECIAL TABLE I.—

INGUINAL HERNIA.—*a. Strangulated*

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
1	—	M.	8 months	L.	5 months	24 hours	?
2	Labourer	M.	63	L.	3 years	7 hours	?
3	Bricklayer	M.	36	R.	10 years	48 hours	?
4	Plasterer	M.	70	?	Few hours	Few hours	?
5	—	M.	14 weeks	R.	Few hours	Few hours	?

*b. Strangulated Irreducible*

6	Shopman	M.	21	R.	1 year	24 hours	Funicular epiplocele
7	Nil	M.	46	R.	Many years	10 hours	Congenital
8	Servant	F.	22	R.	20 years	24 hours	?

*c. Strangulated Irreducible*

9	Engine driver	M.	47	L.	15 years	24 hours	Enterocoele
10	Nil	M.	74	L.	14 years	48 hours	Enterocoele
11	Nil	M.	79	L.	5 months	48 hours	Enterocoele
12	Labourer	M.	42	R.	30 years	72 hours	Congenital
13	Labourer	M.	38	R.	20 years	Few hours	Enterocoele

**HERNIA.***Irreducible. No operation.*

Treatment.	No. of days in hospital.	Result.	Remarks.
Reduced by taxis	1	C.	
Hot bath. Spontaneous reduction	6	C.	
Hot bath. Spontaneous reduction	2	C.	
Hot bath, taxis. Truss	5	C.	
Hot bath, ice-bag, taxis	1	C.	

*Reduction followed by Radical Cure.*

Hot bath, ice-bag. Spontaneous reduction. Radical cure after 10 days. Omentum replaced. Ligature and ablation of sac. Suture of pillars. Silk used throughout	33	C.	
Hot bath, ice-bag. Spontaneous reduction. Radical cure after 4 days. Sac ligatured and ablated. Testis excised. Pillars not sewn	29	C.	
Spontaneous reduction in hot bath. Sac ligatured and ablated. Pillars sewn	26	C.	

*Herniotomy and Radical Cure.*

Congested small gut replaced. Sac ligatured and ablated. Pillars sewn. Silk used throughout	21	C.	
Ileocecal flexure replaced. Peritoneum stitched up with silk, and pillars sewn with goldbeater's skin	25	C.	Gut but slightly congested.
Ileum, colon, and appendix replaced. Sac ligatured and ablated. Pillars sewn	14	C.	Some adhesions required separation before gut could be reduced.
Small gut replaced. Sac ligatured and ablated. Pillars sewn with kangaroo tendon. Testis excised	14	C.	Gut congested, but in good condition.
Small gut replaced. Appendix on posterior wall of sac. Sac ablated up to appendix and ligatured. Pillars not sewn	18	C.	2 feet of small gut in sac.

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
14	Boot-salesman	M.	30	R.	10 months	24 hours	Epiplocele
15	Tailor	M.	30	R.	15 years	6 hours	Entero-epiplocele
16	Nil	M.	55	L.	34 years	8 hours	Enterocoele
17	Nil	F.	35	L.	18 months	48 hours	Epiplocele
18	Carman	M.	48	L.	17 years	24 hours	Enterocoele
19	Gasworker	M.	23	L.	Few hours	Few hours	Enterocoele
20	Cabinet-maker	M.	41	R.	12 years	2 days	Enterocoele
<i>d. Strangulated Irreducible</i>							
21	Van boy	M.	18	R.	2 days	48 hours	Enterocoele
22	Pauper	M.	34	R.	Since infancy	96 hours	Enterocoele
23	Carpenter	M.	49	R.	Many years	24 hours	Entero-epiplocele
24	Hairdresser	M.	26	R.	Many years	24 hours	Congenital enterocoele
25	Laundryman	M.	39	R.	2 years	96 hours	Enterocoele

Treatment.	No. of days in hospital.	Result.	Remarks.
Omentum ablated. Sac ligatured and ablated. Pillars not sewn	17	C.	
Omentum ablated. Congested small gut returned. Sac ligatured and ablated. Pillars sewn	26	C.	
Sac contained clear fluid. Several loops of congested small gut replaced. Sac ligatured and ablated. Pillars sewn	18	C.	Constriction at external abdominal ring.
Omentum ligatured and ablated. Sac ligatured and ablated. Pillars sewn. Silk used throughout	16	C.	Constriction by a band in sac.
Stricture divided, gut reduced. Sac ligatured and ablated. Pillars stitched	21	C.	Sac much infiltrated with blood. Gut tightly nipped.
Stricture divided, gut reduced. Sac ligatured and ablated. Pillars sutured	27	C.	Small gut very black, but still polished.
Stricture divided, gut reduced. Sac ligatured and ablated. Pillars by Macewen's method	17	C.	Small gut tightly held in stricture.

*Herniotomy only.*

Small gut deeply congested. No radical attempted. Tube placed in through internal ring	20	C.	Progress good throughout.
Small gut congested, but in good condition. No radical cure as parts were too lax. Sac excised	—	—	
Small gut much congested. Peritoneal coat torn in places. Omentum ablated. Sac excised. Tube into abdomen	22	C.	
Sac contained foul fluid and 3 feet of extremely congested small gut. Gut washed and replaced. Tube into abdomen	1	D.	Hernia had been punctured by a trocar a few hours before admission. Patient gradually sank and died. No P.M.
Reduction under anæsthetic. Persistence of symptoms. Cœliotomy on same day	33	C.	Small intestine found at operation marked by constriction rings where it had been nipped in hernial sac. Abdomen closed.



FEMORAL HERNIA.—*a. Strangulated*

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
1	House-work	F.	56	R.	15 years	12 hours	?
<i>b. Strangulated Irreducible</i>							
2	—	F.	43	R.	2 years	8 days	Enterocoele
3	Widow	F.	48	L.	Many years	5 days	Enterocoele
4	House-work	F.	66	R.	18 years	2 days	Enterocoele
5	House-work	F.	63	R.	1 year	3 days	Enterocoele
6	House-work	F.	40	R.	5 years	2 days	Enterocoele
7	Washerwoman	F.	67	R.	Many years	7 days	Enterocoele
8	House-work	F.	40	R.	7 months	1 day	Enterocoele
9	—	F.	60	R.	30 hours	30 hours	Enteropiplocele
10	—	F.	34	R.	12 years	7 days	Epipllocele
11	Nil	F.	73	L.	18 months	4 days	Enterocoele
12	—	F.	76	L.	7 years	Few hours	Enterocoele
13	—	F.	67	L.	2 days	2 days	Enterocoele
14	Painter	M.	59	L.	?	3 days	Enteropiplocele
15	Farmer	M.	58	R.	30 years	2 days	Enteropiplocele
16	Nil	M.	72	R.	2 days	2 days	Epipllocele

*Irreducible. No Operation.*

Treatment.	No. of days in hospital.	Result.	Remarks.
Taxis. Reduced	1	C.	

*Herniotomy and Radical Cure.*

Small gut replaced. Sac ligatured and ablated	25	C.	Well-marked constriction rings on loop of small gut.
Small gut much congested. Replaced. Sac ligatured and ablated	22	C.	
Small knuckle of gut congested. Replaced. Sac ligatured and ablated	2	D.	Fæcal vomiting; diarrhœa. Death. P.M.—Gut recoverable; constriction rings still marked, and were 3 feet from cæcum.
Small gut with well-marked rings of constriction. Replaced. Sac ligatured and ablated	46	C.	Developed bed sore.
Small gut congested. Replaced. Sac ligatured and ablated	27	C.	Gut but little congested.
Cæcum and ileum replaced. Sac ligatured and ablated. Fascia stitched	29	C.	Ileum much distended.
Deeply congested small gut replaced. Sac excised and stitched up	16	C.	Sac contained what appeared to be the Fallopian tube. Sac ablated up to this, stitched, and then pushed back into abdomen.
Omentum ablated. Small gut reduced. Sac ligatured and ablated	19	C.	Sac contained clear fluid.
Omentum ablated. Sac ligatured with silk and ablated	22	C.	Omentum connected with the abdomen by a long pedicle, and was deeply congested.
Sac contained two knuckles of small gut matted together by old adhesions. Replaced into abdomen. Sac ligatured and ablated	9	D.	P.M.—Matted loops lay in posterior quadrant of pelvis. Exact seat not mentioned. Hypostatic pneumonia. Chronic interstitial nephritis.
Small gut returned. Sac ligatured and ablated	18	C.	Gut only slightly congested.
Small gut tightly nipped. Peritoneum rent, and required three Lembert sutures. Sac ligatured and ablated	29	C.	Some difficulty in procuring an action of the bowels.
Omentum left adherent at neck of sac. Small gut reduced. Sac ligatured and ablated	1	D.	P.M.—Thin grey ring of constriction at a point 11 feet from cæcum. Gut much congested for some inches below the ring. No peritonitis.
Omentum ablated. Knuckle of deeply congested small gut reduced. Sac ligatured with silk and ablated	35	C.	
Omentum slipped back when constriction was divided. Sac ligatured with silk and ablated	28	C.	

No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
17	Married	F.	32	R.	6 years	24 hours	Enterocoele
18	Widow	F.	60	R.	7 days	7 days	Enterocoele
19	?	F.	58	R.	26 years	4 days	Enteropiplocele
20	Nurse	F.	48	R.	4 years	12 hours	Enteropiplocele
21	?	F.	55	R.	3 days	3 days	Enteropiplocele
22	?	M.	56	R.	3 years	24 hours	Enterocoele

*c. Strangulated Irreducible.*

23	Nil	F.	72	L.	Many years	?	Enteropiplocele
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*d. Strangulated Irreducible.*

24	Brush maker	M.	59	L.	6 months	3 days	Enterocoele
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*e. Strangulated Irreducible. Herniotomy.*

25	House-work	F.	55	R.	Many years	5 days	Enteropiplocele
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Treatment.	No. of days in hospital.	Result.	Remarks.
Omentum in diverticulum of sac ligatured and ablated. Sac ligatured and ablated. Poupart's ligament sewn to pectineal fascia	14	C.	Lumen of (small) gut only partially occluded.
Appendix adherent in sac, separated and replaced with small gut. Sac ligatured and ablated	22	C.	
Omentum ligatured and ablated. Small gut returned. Sac ligatured and ablated. Fascia sewn	2	D.	Death from asthenia. P.M.—Some hæmorrhage into omentum; state of small gut and seat of constriction not stated.
Mass of adherent omentum ablated. Small gut replaced. Sac ligatured and ablated. Fascia sewn	20	C.	Knuckle of gut found in mass of omentum, deeply congested.
Small gut surrounded by mass of omentum. Gut slipped back. Omentum ablated. Sac ligatured and ablated. Fascia sewn	23	C.	
Small gut replaced. Sac ligatured and ablated	16	C.	Small knuckle of gut deeply congested.

### *Herniotomy only.*

Several knuckles of matted small gut, tightly nipped and collapsed, were reduced. Omentum adherent at neck of sac, ablated below and pushed back. Sac ablated after ligature	2	D	P.M.—Loops of matted small gut near ring, to which also the omentum was adherent. Two constriction rings on bowel, 1 foot and 7 feet respectively from cæcum, between which the gut was collapsed and congested. Chronic interstitial nephritis.
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### *Herniotomy and Fæcal Fistula.*

Sac incised. Fæcal abscess. Stricture divided by incising Poupart's ligament. Adhesions not touched. Fæcal fistula	153	C.	Subsequent suture of sides of fæcal fistula and plastic of skin. No sinus on discharge.
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### *Resection, and Suture.*

Omentum ablated. 2 inches of small gut tightly nipped and much congested. Constriction rings thin and gangrenous. Resection of 3 inches of bowel. Circular enterorrhaphy. Continuous suture to mucous coat, and interrupted Lembert's to peritoneal coat	3	D.	Temperature rose to 104° F., and death took place apparently from exhaustion. P.M.—Sutures were perfect. No peritonitis. Resection portion lay 10 inches from cæcum. Three fibrous strictures of small gut found.
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No.	Occupation.	Sex.	Age.	Side.	Duration of hernia.	Duration of strangulation.	Structure of hernia.
26	—	F.	51	R.	2 years	4 days	Entero-epiplocele

## UMBILICAL

*a. Strangulated Irreducible.*

1	?	F.	48	—	7 years	Few hours	?
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*b. Strangulated Irreducible.*

2	Nil	F.	69	—	40 years	6 days	Entero-epiplocele
3	?	F.	39	—	18 months	5 days	Entero-epiplocele
4	House-work	F.	51	—	Chronic	4 days	Entero-epiplocele
5	?	F.	53	—	5 years	2 days	Entero-epiplocele
6	Married	F.	54	—	21 years	7 days	Epiplocele
7	?	F.	55	—	10 years	7 days	Entero-epiplocele

## OBTURATOR

*Strangulated Irreducible.*

1	Nil	F.	71	L.	7 years	3 days	Enterocoele
				R.	6 days	Few hours	Enterocoele



Treatment.	No. of days in hospital.	Result.	Remarks.
Much blood-stained fluid in sac. Omentum ablated. Small gut tightly nipped, gangrenous, and with peritoneal coat torn. Resection of 8 inches with V-shaped piece of mesentery, which bled well. Circular enterorrhaphy. Two continuous silk sutures to mucous coat. Peritoneal coat sutured with interrupted Lembert. Mesentery sewn up	37	C.	Fæcal abscess on 7th day, followed by fæcal fistula, which was healed on discharge.

**HERNIA.***No Operation.*

Reduced by taxis	7	C.	
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*Herniotomy and Radical Cure.*

Adherent omentum ablated. Knuckle of small gut reduced. Sac ablated. Peritoneum and fascia stitched	25	C.	
Adherent omentum ablated. Small intestine returned, being only slightly congested. Sac ablated. Fascia stitched	48	C.	Omentum that was ablated weighed 3 lbs.
Omentum ablated. Congested small gut returned. Sac ablated. Fascia sewn	2	D.	
Omentum ablated. Three loops of small gut reduced. Sac ablated. Fascia sewn	35	C.	Gut only slightly congested.
Matted omentum ablated. Sac ablated and stitched. Fascia sewn	29	C.	
Adherent omentum ligatured and ablated. Small gut quite healthy, replaced. Sac ablated. Fascia sewn	31	C.	

**HERNIA.***Herniotomy and Radical Cure.*

Stricture divided down and inward. Sac twisted, ligatured, and ablated	55	C.	Small hernia. Sac white and fibrous, and lay beneath the pectineus muscle. Gut deeply congested. Obturator artery lay above and to the inner side of neck of sac.
Gut (small) easily reduced. Sac ligatured and ablated	55	C.	Sac lay beneath fascia. This hernia appeared while patient was in hospital, on the 26th day after admission, but quickly disappeared, to come down 6 days later with symptoms of strangulation. ( <i>Vide</i> 'Lancet,' April 4, 1896.)

## APPENDIX TO SPECIAL TABLE I.—

Initials.	Occupation.	Age.	Sex.	Side.	Duration of hernia previous to 1st operation.	Nature of primary hernia.	Method of radical cure of primary hernia.	Course of healing of primary hernia.	Interval since primary rad. cure.
G. D. S.	Salesman	21	M.	L.	6 weeks	Reducible inguinal, scrotal, patulous ring	Sac ablated and ligatured; pillars sewn with silk	First intention	16 months
W. B. L.	Ware-houseman, printer	17	M.	L.	6 weeks	Reducible inguinal, funicular	Sac ligatured and ablated; pillars sutured	First intention	14 months
T. A.	Fireman	21	M.	R.	?	Reducible inguinal, scrotal, funicular	Kocher's. Sac secured with silk worm-gut sutures; pillars not sewn	Suppuration	9 months
C. T.	Potter, soldier	30	M.	L.	6½ years	Reducible inguinal, scrotal, funicular	Sac ligatured and ablated; pillars sewn, all with catgut	First intention	6 months
F. D.	Cook	46	M.	R.	3 years	Reducible inguinal	Macewen's method with silk	Slight suppuration	28 months
G. K.	Labourer	22	M.	R.	5 years	Reducible inguinal	Sac ligatured and ablated; pillars sewn, all with catgut	First intention	22 months
J. B.	Carman	42	M.	R.	30 years; 15 hours' strangulation	Strangulated inguinal, scrotal	Sac ligatured and ablated; pillars sewn with kangaroo tendon	Suppuration	27 months
W. O.	Ostler	44	M.	R.	19 years	Reducible inguinal, scrotal	Sac ligatured and ablated; pillars and conjoined tendon sewn	First intention	50 months
H. A.	Labourer	23	M.	R.	7 years	Reducible inguinal, incomplete	No sac found; pillars only sewn	First intention	1 month
T. H.	Carman	49	M.	L.	21 months	Irreducible inguinal	Sac ligatured and ablated; pillars and conjoined tendon sewn	First intention	36 months
C. D.	School	12	M.	R.	Over 12 months	Reducible inguinal, scrotal	Sac ligatured and ablated; pillars sewn, all with silk	First intention	18 months

*Statement of Recurrent Hernia.*

Nature of recurrent hernia.	Duration of recurrent hernia.	Method of radical cure of recurrent hernia.	Course of healing.	Remarks.
Reducible inguinal	1 month	Sac ablated and ligatured; pillars sewn	Suppurated	Previous radical cure of varicocele.
Reducible inguinal	6 months	No sac found; pillars sutured with kangaroo tendon	First intention	
Reducible inguinal	7 months	Sac ligatured with silk and ablated; pillars sewn with kangaroo tendon	Suppuration	Death from septicæmia (see Special Table III). Primary operation at the London Hospital.
Reducible inguinal	14 days	Sac ligatured with silk and ablated; pillars sewn with catgut	Suppuration	
Reducible inguinal	?	Macewen with silk	Suppuration	Bad cough after first operation.
Reducible inguinal	10 days	Sac ligatured and ablated; pillars sewn	First intention	
Reducible inguinal	2 months	Peritoneum not seen; cæcum incised by mistake; appendix adherent to cord and removed; pillars and conjoined tendon sewn with goldbeater's skin	Suppurated	Much matted and altered omentum removed at first operation.
Reducible inguinal	14 days	Sac ligatured and ablated; pillars sewn, all with silk	Suppurated	
Reducible inguinal	Few days	Sac ligatured with silk; pillar sewn with goldbeater's skin	First intention	Previous radical cure of left reducible inguinal; good result.
Irreducible inguinal	5 days	Omentum ligatured and ablated; sac stitched with silk and ablated; pillars sewn with goldbeater's skin	Suppuration	Fatal from general septic peritonitis. Ligature on omentum applied very close to large gut, which was possibly wounded; abscess formed round stump of omentum. Primary radical cure at Guy's Hospital.
Irreducible inguinal	3 weeks	Adherent omentum ablated; sac ligatured and ablated; pillars sewn, all with silk	First intention	

SPECIAL TABLE II.—*Erysipelas*

No.	Sex.	Age.	Disease for which admitted.	Ward in which it arose.	Duration in hospital before attack.	Probable cause of attack.	Month.
1	M.	61	Carcinoma of rectum	Leopold	16 days	Inguinal colotomy	February
2	M.	73	Rodent ulcer of orbit	Clayton	42 days	Rodent ulcer	July
3	M.	50	Tumours of liver (nature?)	Edward	7 days	Cœliotomy	October
4	F.	50	Cystic disease of breast	Beatrice	8 days	Amputation of breast	May
5	F.	29	Syphilitic stricture of rectum	Elizabeth	69 days	?	January
6	F.	26	Syphilitic stricture of rectum	Elizabeth	26 days	Slitting up of fistula	February
7	F.	8	Tuberculous glands of neck	Alexandra	12 days	Excision of glands	June
8	F.	25	Tuberculous hip	Alexandra	51 days	Scraping of sinus	April
9	M.	28	Ankylosis of hip, abscess	Leopold	12 days	Incision of abscess	May
10	M.	13	Subpectoral abscess	Leopold	15 days	Incision of abscess	November
11	M.	34	Chronic abscess of neck	Leopold	7 days	Incision of abscess	February
12	F.	9	Sinus of knee	Beatrice	28 days	Scraping of sinus	January
13	M.	52	Sinus of groin	William	2 days	Scraping of sinus	June
14	F.	42	Cellulitis of hand	Anne	18 days	Ulcer of hand	November
15	F.	21	Dermatitis exfoliativa	Elizabeth	12 days	Skin eruption	February
16	F.	15	Genu valgum	Elizabeth	12 days	?	December

*(arising in hospital).*

Part where eruption appeared.	Interval between action of probable cause and appearance of eruption.	Duration of attack.	Result.	Remarks.
Wound	16 days	6 days	D.	Patient became rapidly very weak when erysipelas occurred, and quickly succumbed.
Ulcer	—	8 days	C.	Spread over face.
Face	1 day	12 days	N.	Patient recovered from erysipelas completely.
Around wound	5 days	4 days	C.	
Face	—	8 days	R.	Erysipelas quite cured.
Buttock	22 days	6 days	R.	Erysipelas cured.
Nose	1 day	10 days	C.	Spread to face.
Hip	20 days	7 days	D.	Erysipelas cured.
Hip, from incision	9 days	5 days	R.	Erysipelas spread to both legs, but was completely cured.
Shoulder, from wound	13 days	7 days	C.	
Neck	7 days	9 days	C.	
Knee	2 days	3 days	C.	
Thigh, from sinus	2 days	2 days	D.	Erysipelas cured.
Hand, from wound	—	7 days	C.	Spread to arm.
Face	—	7 days	C.	
Face	—	37 days	N.	Erysipelas cured.



SPECIAL TABLE II.—*Erysipelas*

No.	Sex.	Age.	Disease for which admitted.	Ward in which it arose.	Duration in hospital before attack.	Probable cause of attack.	Month.
17	F.	63	Scalp wounds	Elizabeth	2 days	Scalp wounds	June
18	F.	46	Scirrhus carcinoma of breast	Alexandra	12 days	Amputation of breast	October
19	F.	59	Scirrhus carcinoma of breast	Elizabeth	9 days	Ulceration of growth	January
	F.	59	Scirrhus carcinoma of breast	Anne	23 days	Ulceration of growth	January
20	M.	17	Acute osteomyelitis of femur	Leopold	126 days	Sinus of thigh	December
21	F.	7 mos.	Acute abscess of neck	Victoria	16 days	Incision of abscess	October

*(arising in hospital)*—continued.

Part where eruption appeared.	Interval between action of probable cause and appearance of eruption.	Duration of attack.	Result.	Remarks.
Face	2 days	6 days	C.	
Back	Same day	8 days	D.	Patient was infected at operation, and temperature rose the same night, and some puffiness of skin of back became apparent. By the following morning the skin of the back near posterior axillary border was in condition of cellulitis. Rash spread to buttocks. Three injections of antistreptococcic serum produced no result. Patient sank and died from erysipelas. P.M.—Solid wedge-shaped infarct in apex of lower lobe of right lung, covered on free surface by plastic pleurisy. Probably pyæmic.
Face	—	5 days	D.	Patient had follicular tonsillitis, starting 3 days after admission, and almost subsided by the 8th day.
Face	—	2 days	D.	Erysipelas produced serious symptoms, and the throat again became bad. Temp. 104°. Throat and rash subsided, and temperature became normal 9 days before the second attack of erysipelas, which found the patient very weak, and quickly produced a fatal result.
Thigh	—	12 days	C.	Rash started at some distance from sinus, but remained local.
Neck	15 days	6 days	C.	Rash spread to back.



## SPECIAL TABLE III.—PYÆMIA, &c.

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### CLASS I.—*Admitted with the disease.*

*Pyæmia neonatorum*.—1. M. M—, female, æt. 2 weeks. Joints became swollen 1 week after birth, and a rash developed a few days later. Abscess on dorsum of right hand. Right elbow swollen, also right leg with dorsum of right foot. On dorsum of left foot was an inflammatory swelling, situated upon which was a vesicle into which hæmorrhage had taken place. Umbilicus not cicatrised, and evidently had been seat of suppuration. Patchy erythematous rash on body. Temp. 103°. Incisions; pus only evacuated from hand. Temperature rose to 109·4°. Death on 3rd day. P.M.—Right elbow contained pus. Organs normal. No internal deposits.

2. R. T—, female, æt. 6 weeks. Erysipelas of body when 3 weeks old, 3 days before admission. On admission many small abscesses over lower limbs and trunk. Temperature reached 105°. Ten incisions made. Antistreptococcic serum, 1 c.c. daily. Death on 3rd day. P.M.—Umbilicus healthy. No disease found in organs.

3. A. F—, æt. 3 weeks. Swelling noticed on inner side of knee 3 days before admission, followed by a smaller swelling on left 6th rib. Temp. 103°. Incisions; pus evacuated. Death. P.M.—Abscesses unconnected with bone. Umbilical cicatrix healthy. No signs of pyæmia or syphilis.

*Cellulitis of leg*.—E. W—, female, æt. 25. Admitted with cellulitis of right leg of some days' standing. Leg tense and swollen. Temp. 103°. Incisions; evacuation of foul sero-pus. Patient weak but restless. Further incisions. Friction sounds in right axilla, followed by coarse râles. Delirium. Death. P.M.—Body extremely fat. Right plastic pleurisy. Pyæmic abscesses in lower and anterior part of right lung. Left lung œdematous. Liver fatty. Kidneys swollen. Cortex enlarged.

*Cellular cutaneous erysipelas*.—R. H—, female, æt. 14 days. Seven days after birth skin on back became inflamed and reddened. On admission the whole back was in a state of acute inflammation from upper dorsal region to the buttocks and thighs. Large areas of skin had already sloughed. Abscess in left groin. Diarrhœa. Abscess incised. Asthma and death on 6th day. P.M.—Small localised empyema in front of left lung. Broncho-pneumonia in left lung with several abscesses, pyæmic in nature. Some islands of collapse. Right lung healthy.

SEPTICÆMIA—*admitted as such*.

*Puerperal venous thrombosis; septicæmia*.—E. A. R—, female, æt. 37, married. Normal confinement 12 days previously. Rigor on 2nd day after confinement. Pain in left leg on 3rd day, which continued and increased up to admission. On examination left thigh swollen and reddened; two sloughing ulcers and numerous small abscesses in course of internal saphena vein. Left leg slightly reddened. Cellulitis of abdominal wall above the left Poupart's ligament. Right forearm reddened and swollen. Left internal saphena tied close to femoral vein. Abscesses incised. Temp. 103°. 5th day, further incisions in leg and arm. 6th day, arm and leg again incised; rigor. 8th day, rigor repeated. 10th day, abscess in leg incised; no signs of infection in pelvis as shown by vaginal examination. 13th day, death from exhaustion. Temperature never reached normal at its lowest point, and fluctuated between 99·2° and 104·8°. Pulse varied from 104 to 136, reaching this value towards the end of illness. Two or three injections of antistreptococcic serum (10 c.c.) were given every day, but without appreciable result. P.M.—Left internal and external iliac veins, together with common femoral, contained puriform clot. Uterus slightly enlarged but normal. Lungs congested. No pyæmic foci. Spleen diffuent. Kidneys normal.

*Hæmorrhagic septicæmia*.—E. M—, male, æt. 26. Poisoned finger in doing a post-mortem examination of a body who died of septic peritonitis. Treated with antistreptococcic serum. *Vide* 'British Medical Journal,' 1896.

*Pelvic cellulitis; septicæmia*.—A. S—, female, æt. 28, married. Confined 3 months previously with the fifth child. Septic trouble ensued, and 5 weeks later patient was seized with violent pain in right groin and knee. One month previously suddenly noticed yellow vaginal discharge and thick urine. Admitted to Adelaide. Mass in right iliac fossa tender to pressure. Right thigh flexed. Quantity of pus in urine. Mass in right iliac fossa depressed right vaginal fornix. Micturition frequent. Temperature fluctuated between 100° and 102°. Transferred to Surgical. Bladder examined and some roughness felt posteriorly. No fistula found. Incision parallel to Poupart's ligament in right iliac fossa evacuated much pus. Drainage. Temperature rose to 105° F. Pus very offensive from wound. Urine still thick with pus. Temperature remained up between 99° and 105°, and only twice touched normal. Two rigors on 3rd and 5th day. Death on 8th day. P.M.—Abscess in iliac region was well drained, reached up towards kidney along psoas, downward into thigh beneath Poupart's ligament. Spleen soft and friable. Liver enlarged, tissue pale and friable. Kidneys normal. Heart flabby. Lungs congested. No disease of uterus or tubes, but the right appendages were matted.

CLASS II.—*Acute bone cases*.

*Acute epiphysitis of radius*.—T. W—, male, æt. 15, labourer. Sprained wrist 4 days before admission. Swelling and pain over lower end of right radius 3rd day. Incisions; pus seen to come from epiphysial line of radius. Drainage. Temp. 103°. 4th day, upper epiphys of radius involved, and exposed by incision; pus evacuated. 5th day, left knee swollen. 6th day, knee subsiding; injection of antitoxin. 7th day, injection repeated; temp. 104·6°;



pain in hip; fluid present. 8th day, arthrotomy of hip; sero-pus evacuated. 9th day, difficulty of breathing; tubular breathing over left lung; injection of antitoxin; temp.  $103.2^{\circ}$ . 12th day, general condition improved; temperature falling; injections (of which six had been given) discontinued. 15th day, temp.  $102.6^{\circ}$ ; injection. 17th day, injection repeated; temp.  $100^{\circ}$ . 23rd day, temp.  $104^{\circ}$ ; injection repeated; dulness and swelling in left loin from ribs to antero-superior spine; skin œdematous; swelling gradually rose over ribs to 5th space. 24th day, injection; swelling in loin subsiding; temperature varies through 5 degrees; wounds healthy. Temperature gradually fell. Patient discharged cured on 40th day.

*Acute necrosis of femur.*—F. T—, male, æt. 17 days. Swelling of thigh noticed when child was 10 days old. Admitted 7 days later. Swelling incised; pus evacuated. Necrosis found bare posteriorly. Death in 2 days. P.M.—Necrosis confined to femur. Pyæmic abscess in right lung.

*Acute epiphysitis of femur.*—J. D—, female, æt. 7 months. Swelling in upper part of left thigh noticed on day of admission. Temp.  $102^{\circ}$  F. Incisions; pus evacuated. Bone found affected near trochanter major. Small abscess arose on part of sternum. Temperature remained high, but fluctuated. Death on 29th day. P.M.—Acute epiphysitis of femur, the neck and trochanter major being separated from the shaft. Joint free. Collapse of lungs. No other pyæmic deposits.

*Mastoid and cerebellar abscess.*—F. C—, female, æt. 20. Discharge from right ear since childhood. Vomiting, rigors, and decrease of discharge 10 days. Foul discharge from right ear. No œdema or tenderness over mastoid. Possibly some proptosis and facial paralysis on right side. Friction sounds in left axilla. Temperature  $106^{\circ}$  F. Internal jugular vein tied in the neck. Mastoid opened and some pus found. Lateral sinus incised and bled freely. 2nd day temperature fell. 3rd day right facial paralysis more marked and affected whole face. Some weakness of the right external rectus. Temperature fluctuated, and touched  $102^{\circ}$ . 4th day, patient still conscious, but inclined to be drowsy and restless. No friction heard in axilla, sound normal over whole chest. 5th day, temperature steadily rising again from normal. 6th day, temperature reached  $109^{\circ}$  F. in spite of tepid sponging. Death. P.M.—Lateral sinus exposed, but the mastoid antrum had not been opened, and lay one sixth of an inch deeper than the gouge had gone. Dura over posterior surface of petrous bone was green and necrotic. Lateral sinus anteriorly to the genu filled with thin offensive fluid. From an inch behind the bend to the torcular the sinus was closed by recent clot, of which the anterior end was beginning to soften. Other sinuses healthy. Anterior and outer aspect of the right cerebellar hemisphere shows an area of suppuration the size of a shilling, not deeply placed as usual, but entirely on the surface. No meningitis. Recent acute left pleurisy, caused by three pyæmic infarcts abutting on surface of lung. Middle ear full of foetid pus. Ossicles had disappeared. Antrum, which was unopened, was a well-marked chamber.

CLASS III.—*Arising in hospital.*

*Otitis media suppurativa ; mastoid caries ; septic thrombosis of lateral sinus ; cerebellar abscess.*—W. P—, male, æt. 3 years. Measles followed by discharge from left ear one year previously. For three days before admission child was drowsy in the daytime and delirious at night. On examination redness and fluctuation behind left ear. 4th day, mastoid opened and pus evacuated. 10th day, head held to the left. Corneal reflex almost lost. Hydrocephalic cry. Photophobia. 14th day, some improvement in general condition. Discharge still foul. 17th day, left facial weakness. 21st day, temp. 104.4°. Right pupil larger than left. Coma. Death. P.M.—Left antrum, which had not been opened, together with the tympanum, was full of pus. Septic thrombosis of lateral sinus. Clot extended down internal jugular into innominate vein. Abscess on posterior surface of petrous bone about the lateral sinus. Tegmen antri carious. Right tympanum and antrum full of pus. Commencing meningitis on superior surface of brain. Lateral ventricles distended with turbid fluid. Left lobe of cerebellum hollowed out into large abscess, which extended up to junction with the pons. Inner margin just fell short of the corpus dentatum. Right empyema. Gangrenous perforation of lung into pleura. Numerous pyæmic foci.

*Irreducible inguinal hernia.*—T. H—, male, æt. 49. Hernia 4 years. Previous radical cure. Return of hernia 5 days before admission, which was irreducible. Radical cure by Mitchell-Banks method. Sac tied with silk after ablation of omentum. Pillars approximated with goldbeater's skin. Patient did badly from time of operation. Temperature rose to 101° F. Death on 4th day after operation. P.M.—Wound readily opened up, and contained much sloughy material and pus. Loculated general septic peritonitis. Small collection of pus in posterior mediastinum.

*Otitis media suppurativa ; mastoid abscess ; septic thrombosis of sinus ; hernia cerebelli.*—A. L. D—, female, æt. 9 years. Discharge from right ear for many years. Ten days before admission child became ill, lost its appetite, and complained of pain in the right ear. Five days before admission had an attack of shivering. Incision behind ear. Pus evacuated. Stacke's operation. Tympanum curetted. Pus around lateral sinus. Internal jugular vein ligatured in the neck and divided. Sinus opened and found to contain pus. No optic neuritis. Temp. 103°. 3rd day, rigor; wound explored. Bone removed. Right temporo-sphenoidal lobe and cerebellum explored for abscess. Nothing found. 7th day, fungus cerebelli. 15th day, fungus cut off, cerebellum again explored with a negative result. Right arm and leg became rigid when cerebellar hernia was ablated. 19th day, right brachial paresis noticed. 17th day, grasp of right hand distinctly weaker than left. Patient irritable but intelligent. Right lateral position constantly assumed. 19th day, right arm more flaccid than left. Difference in power of arms very slight. Dorsal position now assumed. Irritability still present. Pupils dilated. Pulse 120. Temp. 102°. 21st day, patient became blue and cold. Right hand colder and bluer than left. Knee-jerks absent. Some right facial weakness. 23rd day, distinct paresis of right arm. Death. P.M.—Lateral sinus contained healthy

clot. Meninges normal. Turbid fluid in right lateral ventricle. Posterior and external part of right cerebellum disintegrated. Corpus dentatum, main part of central white matter, and superior peduncle normal. Pons and fourth ventricle healthy. Lower portion of internal jugular full of pus down to subclavian vein. Large retro-peritoneal collection of pus extending from top of kidneys down into pelvis and up the anterior abdominal wall for space of 3 inches, so that peritoneum was altogether lifted out of pelvis. No pyæmic foci in lungs.

*Scirrhus carcinoma; erysipelas; pyæmia*.—E. S—, female, æt. 46. Amputation of breast and clearance of axilla. Vide Special Table II.

#### SEPTICÆMIA.

*Recurrent reducible inguinal hernia*.—T. A—, male, æt. 21, admitted with a recurrent hernia of about 8 months' standing. Previous radical cure was followed by suppuration. Radical cure. Sac very thin and extremely adherent. Stitched with silk at internal ring. Pillars approximated with kangaroo tendon by Macewen's method. Following day dressings were changed, as they were soaked through with bloody fluid, while in the evening of the same day an erythematous rash was noted over the chest. Vomiting since operation. 3rd day, temperature rose to 104° F. Delirium. Vomiting somewhat fæcal in smell. Rash on chest faded to a dull red. Wound appeared healthy. Rectal feeding. 4th day, rash petechial. Death. P.M.—Wound healed, and healthy superficially, but deeper strumous pus was found welling up from about the kangaroo tendons which had been the starting-point of the infection. Internal ring well closed. Peritoneum healthy. Spleen large and firm. Blood-stained fluid in pericardium and subserous petechiæ on the visceral layer. Subserous petechiæ were also found in the pleura. Lungs showed diffuse infiltration with blood, and also infarction. Kidneys were studded with numerous subcapsular hæmorrhages.

SPECIAL TABLE IV.—*Fractures and Dislocations treated*

BONE.	Sex.		Age.									Not stated.
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60		
DISLOCATIONS.												
<i>Inferior maxilla—</i>												
Unilateral . . . .	2	1	...	...	1	1	...	...	1	...	...	
Bilateral . . . .	...	1	...	...	...	...	1	...	...	...	...	
<i>Clavicle—</i>												
Acromial end . . . .	4	...	..	1	...	3	...	...	...	...	...	
<i>Humerus—</i>												
Subcoracoid . . . .	36	11	...	...	...	3	14	9	9	11	...	
Subglenoid . . . .	5	4	...	...	...	...	...	2	4	3	...	
Not stated . . . .	5	1	...	...	...	2	...	2	...	1	1	
<i>Radius and ulna . . . .</i>	13	3	...	1	10	2	2	...	...	...	1	
<i>Radius . . . . .</i>	2	1	1	1	1	...	...	...	...	...	...	
<i>Ulna . . . . .</i>	2	...	...	1	1	...	...	...	...	...	...	
<i>Metacarpus . . . . .</i>	1	...	...	...	...	...	1	...	...	...	...	
<i>Digits of hand—</i>												
Proximal phalanx . . . .	6	1	...	...	3	1	1	...	2	...	...	
Middle phalanx . . . .	2	2	...	...	...	1	2	1	...	...	...	
Distal phalanx . . . .	2	1	...	...	2	...	...	1	...	...	...	
FRACTURES.												
<i>Nasal bones . . . . .</i>	6	3	...	...	1	3	3	1	1	...	...	
<i>Inferior maxilla . . . .</i>	16	3	...	...	2	7	5	5	...	...	...	
<i>Scapula . . . . .</i>	6	1	2	...	...	2	1	...	2	...	...	
Separation of acromial epi- physis	1	...	1	...	...	...	...	...	...	...	...	
<i>Clavicle . . . . .</i>	74	48	35	27	16	12	14	5	5	7	1	
Separation of epiphysis	...	1	...	1	...	...	...	...	...	...	...	

*in Casualty Department, not admitted to Wards.*

Side of body.			Remarks.
R.	L.	Not stated.	
3	...	...	Direct violence 1.
...	...	...	
2	2	...	Direct violence 2. Backwards and upwards 3.
22	25	...	Direct violence 5; indirect violence 4. Subclavicular 2. Anæsthetic 4. 8th time 1; 4th time 3; 5th time 1. Muscular action 1.
6	3	...	Anæsthetic 3. Dislocated several times before 1; 5th dislocation 1.
5	1	...	Direct violence 3.
12	4	...	Indirect violence 5. Backwards 8; backwards and outwards 4. Fracture of internal condyle of humerus 2. 2nd time 1; 3rd time 1.
2	1	...	Backwards 3. Greenstick of ulna, upper third, 1.
...	2	...	Backwards 1. Fracture of internal condyle 1.
...	1	...	
5	2	...	Index 2; thumb 4. Backwards 2; inwards 1. Compound 1.
...	4	...	Index 1; ring 2; middle 1. Backwards 1; forwards 1.
2	1	...	Index 2; thumb 1. Forwards 1. Compound 1. Amputation of phalanx 1.
6	8	1	Compound 2.
8	8	3	By last molar 5; vertical ramus 1; angle 3; by canine 1; symphysis 3; alveolar border 1; multiple 1. Direct violence 7.
5	2	...	Spine 2; acromial process 2; vertical below spiral 1. Direct violence 1.
...	1	...	
59	62	1	Outer third 32; middle third 20; inner third 7; acromial end 8; between ligaments 3; greenstick 8. Comminuted 2. Direct violence 11.
1	...	...	Direct violence.

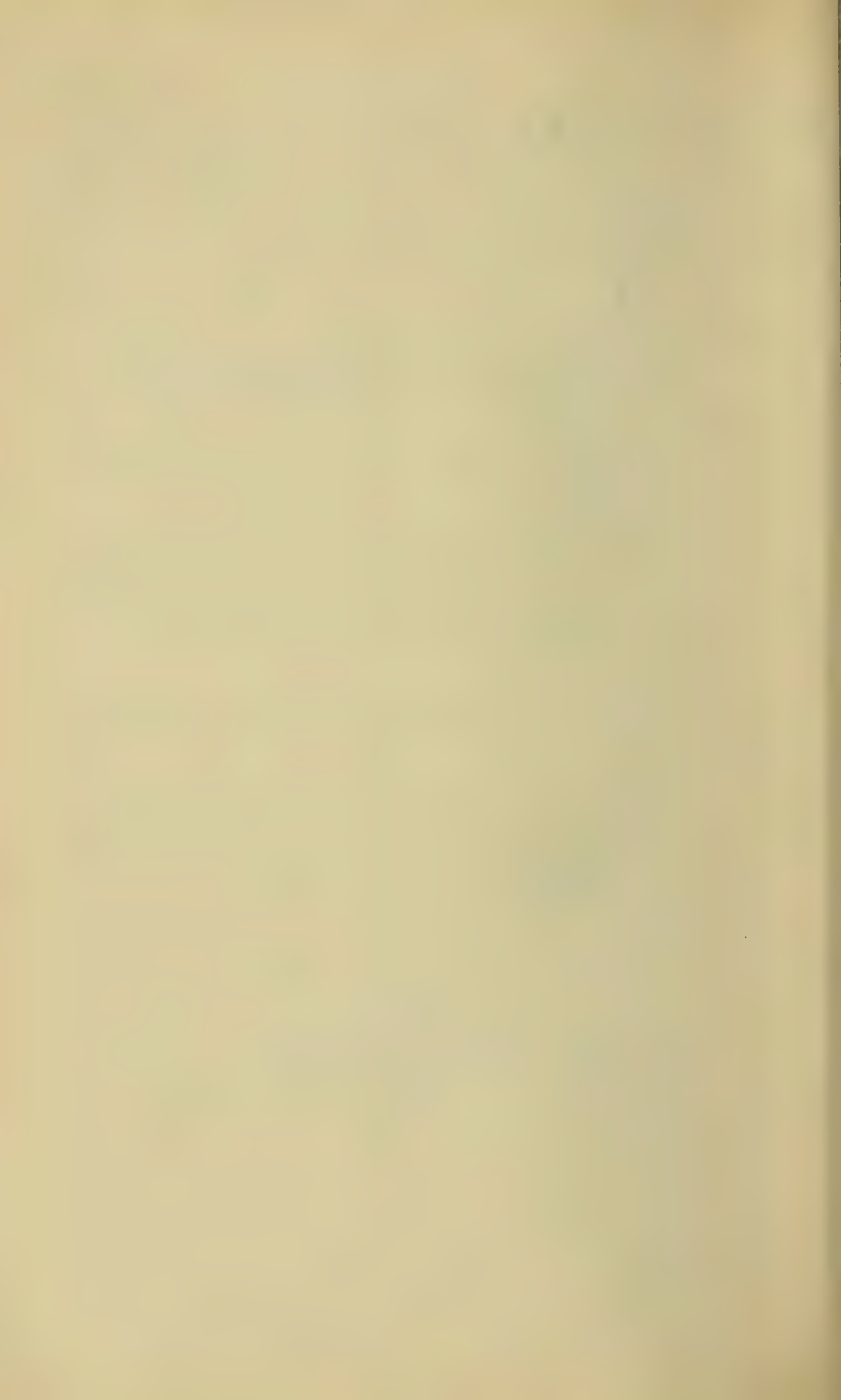


SPECIAL TABLE IV.—*Fractures and Dislocations treated in*

BONE.	Sex.		Age.									Not stated.
	M.	F.	-5	-10	-20	-30	-40	-50	-60	+60		
FRACTURES—continued.												
<i>Humerus—</i>												
Shaft . . . . .	34	11	6	12	6	2	2	3	7	7	...	
Anatomical neck . . . . .	...	1	...	...	...	...	...	...	...	1	...	
Lower extremity . . . . .	15	4	3	8	7	...	1	...	...	...	...	
Separation of epiphysis . . . . .	4	1	4	1	...	...	...	...	...	...	...	
<i>Radius and ulna</i> . . . . .	60	20	20	27	25	1	3	1	2	...	1	
<i>Radius</i> . . . . .	39	23	12	9	12	8	7	3	8	2	1	
Colles' . . . . .	12	55	...	1	7	3	13	13	17	12	1	
Separation of epiphysis . . . . .	6	4	5	3	2	...	...	...	...	...	...	
<i>Ulna—</i>												
Shaft . . . . .	12	4	2	3	3	...	2	2	3	1	...	
Olecranon . . . . .	6	2	1	...	...	3	2	...	...	2	...	
<i>Metacarpus</i> . . . . .	22	13	1	2	3	10	7	4	4	2	2	
<i>Phalanges</i> . . . . .	44	6	...	2	13	14	13	5	1	...	2	
<i>Femur</i> . . . . .	3	1	3	1	...	...	...	...	...	...	...	
<i>Tibia—</i>												
Shaft . . . . .	21	8	6	7	6	2	3	2	2	1	...	
Separation of epiphysis . . . . .	1	...	...	1	...	...	...	...	...	...	...	
<i>Tibia and fibula</i> . . . . .	12	3	...	6	2	1	3	1	2	...	...	
<i>Fibula</i> . . . . .	39	7	1	4	5	7	12	10	6	1	...	
<i>Metatarsus</i> . . . . .	9	2	1	1	4	2	...	3	...	...	...	
<i>Phalanges</i> . . . . .	5	...	...	1	3	...	1	...	...	...	...	

*Casualty Department, not admitted to Wards—continued.*

Side of body.			Remarks.
R.	L.	Not stated.	
23	22	...	Upper third 9; middle third 6; lower third 13. Surgical neck 10; into elbow-joint 2; comminuted 1; internal condyle also 1; greenstick 2; backward dislocation of elbow 1. Fracture 7 weeks previously 1. Direct violence 7; indirect violence 8; muscular violence 1.
...	1	...	
10	9	...	Internal condyle 13; external condyle 6; into joint 3; dislocation of radius outwards 1.
4	1	...	Upper 1; lower 4.
47	33	...	Upper third 3; middle third 14; lower third 21. Compound 1; 2 cases fractured at different levels; greenstick 37. Indirect violence 10; direct violence 8. Fracture 4 months previously 1.
26	32	4	Upper third 7; middle third 7; lower third 32. Greenstick 11; compound 1. Direct violence 6; indirect violence 2.
26	41	...	Direct violence 7; indirect violence 13.
4	6	...	Upper 1; lower 9.
8	8	...	Upper third 3; middle third 4; lower third 5. Greenstick 3. Direct violence 5; indirect violence 1. Compound 1.
1	7	...	
17	18	...	Thumb 8; index 7; middle 2; ring 4; little 9. Multiple 2.
24	26	...	Thumb 8; index 18; middle 11; ring 7; little 5. Proximal phalanges 23; middle 14; distal 14. Compound 10; multiple 2. Amputation 2.
3	1	...	Upper third 1; middle third 2; lower third 1.
19	10	...	Upper third 5; middle third 3; lower third 14.
1	...	...	Lower.
9	6	...	Upper third 1; middle third 2; lower third 7. Pott's 2; compound 1; fracture at different levels 1.
27	19	...	Upper third 4; middle third 1; lower third 32. Pott's 6. Direct violence 2; indirect violence 10.
7	4	...	1st metatarsal bone 3; 2nd 1; 3rd 2; 4th 6. Multiple 1.
1	4	...	Great toe 5. Proximal 4; distal 1.



# REPORT OF

## THE OBSTETRICAL DEPARTMENT

### FOR 1896.

BY WALTER W. H. TATE, M.D., M.R.C.P.

THE JUNIOR OBSTETRIC HOUSE PHYSICIANS FOR THE YEAR WERE MESSRS.  
G. G. GENGE, C. W. GRANT WILSON, P. L. BLABER, E. L. COLLIS, AND  
A. L. HOME.

I HAVE to express my best thanks to Mr. A. L. Home for kindly preparing all the statistical figures for this report.

From the 1st of January, 1896, to the 31st of December, 1896, 2509 women were attended in the maternity department of the hospital. These figures represent an increase of 291 over the corresponding period last year. Of the total number 2484 resulted in single births, 24 in twin births, and 1 in triplets. Included in the single births were 33 cases of abortion.

In the following table the various presentations are classified :

	Among the single births.	Among the twin births.	Total.
Vertex . . . . .	1915	33	1948
Vertex with prolapsed arm . .	—	1	1
Breech . . . . .	53	9	62
Superior extremities, including the shoulder . . . . .	12	—	12
Inferior extremities . . . . .	—	1	1
Face and brow . . . . .	8	—	8
Funis . . . . .	5	—	5
Not stated (including "born be- fore arrival") . . . . .	458	7	465
Abortions . . . . .	33	—	33
	2484	51	2535

## Of the 2509 women attended—

395 were 1st confinements.			68 were 10th confinements.		
406	„	2nd	„	45	„
361	„	3rd	„	25	„
306	„	4th	„	13	„
248	„	5th	„	4	„
214	„	6th	„	4	„
169	„	7th	„	1	„
135	„	8th	„		
113	„	9th	„		
			<hr/> 2507		

In 2 cases the facts were not recorded.

The following table shows the number of patients confined at each successive year of life :

Age.	No. of women confined.	Age.	No. of women confined.
15	...	33	...
16	...	34	...
18	...	35	...
19	...	36	...
20	...	37	...
21	...	38	...
22	...	39	...
23	...	40	...
24	...	41	...
25	...	42	...
26	...	43	...
27	...	44	...
28	...	46	...
29	...	47	...
30	...	56	...
31	...	?	...
32	...		
		<hr/> 2509	

Delivery was completed by means of forceps in 52 cases. In 5 of these they were employed on account of contracted pelvis, in 1 case they were applied to the after-coming head in a case of shoulder presentation in which version had been performed, and in the rest of the cases they were used on account of delayed labour. In 25 out of the 52 cases in which they were used the patients were primiparæ, and in 4 out of these the perinæum was ruptured.

The following is a detailed statement of the 5 cases of PLACENTA PRÆVIA :



No.	Age of mother.	Confinement.	Sex of child.	Treatment.	Result to mother.	Result to child.	Position of placenta.
2087	25	3rd	F.	Version	R.	D.	Central.
2276	24	5th	F.	De Ribes bag ; version	R.	D.	Lateral.
2479	32	6th	M.	Forceps	R.	L.	Not stated.
3598	25	5th	M.	Not stated	R.	D.	„
254	30	3rd	M.	De Ribes bag ; version	R.	D.	Central.

CASES OF VERSION.—Version was performed in 15 cases :

3 cases for placenta prævia.

6 „ shoulder presentation.

4 „ contracted pelvis.

1 case for brow presentation.

1 „ vertex presentation with prolapsed arm and foot.

BREECH presentations occurred in 62 cases, giving a proportion of 1 in 40·5 cases. In 16 cases the children were stillborn, representing a mortality of 25·8 per cent.

Six maternal deaths occurred during the year. The following table gives a brief record of the particulars of each case :

No.	Age.	Confinement.	Result to child.	Interval between birth of child and death of mother.	Cause of death.
427	30	8th	L.	5 months	Pelvic cellulitis; chronic intestinal obstruction.
1843	24	3rd	L.	17 days	Nephritis; uræmic coma.
2523	32	6th	Stillborn	4 days	Puerperal dementia; generally contracted and flattened pelvis; version; craniotomy; peritonitis.
3148	35	5th	Undelivered	—	Rupture of uterus.
3297	41	4th	4 months' abortion	9 days	Acute bronchitis; cardiac failure.
3371	34	7th	L.	Not stated	Not stated.

This gives a mortality of ·24 per cent.

OF THE CHILDREN.—During the year 2535 children were born, including 24 cases of twin births and 1 case of triplets.

Of those in which the sex is recorded 1325 were males and 1179 were females; in the remaining 34 the sex is not stated.

There were 155 stillbirths, which represents the somewhat large proportion of 1 stillbirth in every 16.2 labours, or 6.14 per cent. of the children born.

The characters in the labours in which the stillbirths occurred are given below.

Natural labours . . . . .	51
Twin births . . . . .	4
Premature births . . . . .	32
Abortions . . . . .	33
Placenta prævia . . . . .	4
Breech presentations . . . . .	16
Shoulder presentations . . . . .	4
Unreduced occip. post. position . . . . .	1
Prolapse of cord . . . . .	3
Contracted pelvis . . . . .	5
Malformed fœtus . . . . .	2

155

The following table gives particulars of the 24 cases of twin births, and also of the case of triplets:

No. in Maternity Book.	Age of mother.	No. of confinement.	Date of birth.	Sex.		Presentation.	
				1st child.	2nd child.	1st child.	2nd child.
1895							
1665	33	7th	Jan. 19	M.	F.	?	?
1667	28	6th	Feb. 13	F.	F.	Vertex	Vertex and hand and foot.
1741	31	3rd	Jan. 29	M.	M.	„	Vertex.
1937	23	3rd	Feb. 23	F.	M.	„	Breech.
2011	32	6th	Jan. 20	F.	F.	?	?
2020	33	7th	April 2	F.	F.	Vertex	Vertex.
2072	40	9th	Mar. 19	F.	F.	„	„
2337	27	6th	May 13	M.	M. F.	„	Vertex,
(triplets)							(3) breech.
2424	39	11th	Feb. 15	M.	M.	Breech	Vertex.
2741	32	9th	June 1	F.	F.	Vertex	„
2846	18	1st	May 26	M.	F.	„	„
2919	33	1st	June 8	M.	M.	„	Breech.
3166	35	6th	Aug. 21	M.	F.	„	Vertex.
3218	30	7th	Oct. 5	M.	F.	„	„
3329	42	5th	Aug. 16	F.	F.	„	„
3331	22	2nd	Aug. 2	F.	F.	?	?
3333	20	1st	Sept. 9	M.	M.	Vertex	Vertex.
3501	25	2nd	Sept. 12	M.	F.	?	„
3638	28	5th	Sept. 23	M.	M.	Vertex	Footling.

No. in Maternity Book.	Age of mother	No. of confine- ment.	Date of birth.	Sex.		Presentation.	
				1st child.	2nd child.	1st child.	2nd child.
1896							
—							
1	29	2nd	Nov. 12	M.	M.	Vertex	Vertex.
30	30	1st	Nov. 28	F.	F.	"	Breech.
124	32	3rd	Oct. 7	M.	F.	"	"
132	36	10th	Sept. 11	F.	F.	"	"
367	30	1st	Dec. 10	M.	F.	"	Vertex.
438	41	2nd	Dec. 27	M.	M.	"	"

As regards the mortality in cases of multiple births, all the mothers recovered, and only 2 cases (Nos. 2424 and 2741) of stillborn children occurred. In each case the dead child was the second child born. The condition of the placenta is only recorded in two of the cases.



# REPORT

## OF THE

### IN-PATIENT DEPARTMENT FOR DISEASES OF WOMEN

#### FOR THE YEAR 1896.

By WALTER W. H. TATE, M.D., M.R.C.P.

THE report for the year 1896 has been arranged in two parts as in preceding years. The first part consists of four Tables, giving (1) the number of patients admitted during the year and the results of treatment; (2) a general classification of the diseases for which the patients were admitted; (3) the number of abdominal and other major operations performed during the year; and (4) the causes of death in the cases ending fatally. The second part gives a short outline of the abdominal operations, followed by three Special Tables, with abstracts of any cases of interest. The first Special Table consists of abdominal sections performed for diseases of the ovaries, the second those for diseases of the Fallopian tube, and the third those undertaken for conditions not included under the first two Tables.

TABLE I.

#### *General Statement of Patients in Adelaide Ward.*

Number of Beds in Ward (including small Ward)	...	...	...	21
Number of Patients in Ward, Jan. 1st, 1896	...	...	...	11
" " " Dec. 31st, 1896	...	...	...	11
" " discharged or who died in 1896:				
Cured	...	...	149	Rate per cent. 55.60
Relieved	...	...	73	27.24
Unrelieved or for other causes	...	...	33	12.31
Died	...	...	13	4.85
Total	...	...	268	100.00

Average number of days of each patient's stay in hospital—23.21.



TABLE II.—General Table of Diseases.

DISEASE.	Number of cases.	Age.					Duration of residence.					REMARKS.				
		10-20	30-40	50-60	Above 60	Under 1 wk.	1-2 weeks	2-4 weeks	1-2 months	Above 2 mos.	Cured.	Relieved.	Unrelieved.	Died.		
I. DISEASES OF OVARY.																
A. Sarcoma . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	An exploratory abdominal section was performed in this case. The disease was found to infiltrate the retro-peritoneal glands as well as both ovaries, so as to make removal of the disease impracticable.
B. Cysts :																
a. Simple and multiple	29	1	10	11	3	1	1	2	11	15	22	6	1	1	1	In 23 cases the tumour was removed by abdominal section. 22 cases were cured; 1 terminated fatally from slowly spreading peritonitis in a rather feeble patient of fifty-one. The 6 cases in which no operative treatment was advised were examples of slightly enlarged cystic ovaries, the small size of which made removal unnecessary.
b. Suppurating . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Treated by abdominal section.
c. Papillomatous . . . . .	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	In the fatal case the patient developed effusion into the right pleural cavity after the operation, and gradually got weaker. She died 31 days after the operation. In the other case abdominal section had been performed for papillomatous disease of both ovaries 2 years previously. She returned to the hospital on account of ascites, and laparotomy showed recurrence of the growth in visceral and parietal peritoneum.
d. Dermoid . . . . .	2	1	1	1	1	1	1	1	1	1	2	1	1	1	1	Both cases were treated by abdominal section.
e. Carcinomatous . . . . .	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Operation was very severe as disease was found to have infiltrated the body of the uterus, and it was found impossible to remove all the disease. Patient died of shock 4 hours after operation.

## II. DISEASES OF FALLOPIAN

## TUBES.

Salpingitis . . . 20 ... 11 5 4 ... 2 7 9 2 8 12 ... 7 out of the 20 cases were treated by abdominal section, and all recovered. Of the remaining 13 cases, one in which an intra-peritoneal abscess existed was treated by vaginal puncture and drainage; the other 12 were relieved by rest in bed.

## Pyosalpinx . . .

3 ... 1 2 ... 3 ... All 3 cases treated by abdominal section.

## Tubo-ovarian abscess . . .

1 ... 1 ... 3 ... Treated by abdominal section.

## Tubal gestation . . .

7 ... 3 3 1 ... 2 5 ... 16 out of the 7 cases were treated by abdominal section. Of the 6 patients operated upon, in 1 the fetus removed showed gestation had advanced to the 3rd month, in another to the 2nd month; 3 were cases of tubal moles, and in 1 the operation was performed on account of pelvic peritonitis following a ruptured tubal gestation which occurred 8 months previous to admission.

III. DISEASES OF THE PELVIC  
PERTONEUM, CELLULAR  
TISSUE, &c.

## Pelvic peritonitis . . .

4 ... 1 3 ... 1 1 2 ... 4 ... In 2 of the cases the inflammatory attack followed confinement at term; 1 case followed miscarriage, and in 1 cause was not ascertained.

## Pelvic cellulitis . . .

6 ... 3 1 2 ... 4 1 1 6 ... 5 cases following confinement; in 1 the cause was not discovered. In 1 case abdominal section was performed, as it was thought that there was disease of the uterine appendages. The disease proved to be cellulitis of the broad ligament, and a discharge of pus subsequently occurred *per vaginam*.

Fibro-cystic tumour of  
broad ligament . . .

1 ... 1 ... 1 ... 1 Removed by abdominal section.

IV. DISEASES OF THE UTERUS  
AND CERVIX.

## Endometritis . . .

18 ... 5 8 3 1 1 ... 14 3 1 ... 14 4 ... 4 of the cases followed confinement; 3 followed abortion; 1 was due to gonorrhoea; in 8 the hæmorrhage was caused by adenoid growths of the endometrium, and in 2 the cause was not evident. All the cases were treated by dilatation of the cervix, followed by curetting or exploration of the uterine cavity as thought requisite.



Carcinoma of body of uterus

Hypertrophy of cervix

Procidencia uteri  
Anteflexion  
Retroversion

# V. DISEASES OF VAGINA,

VULVA, &C.

Epithelioma of clitoris  
Ulceration of vulva

Ulceration of urethra  
Labial abscess  
Bartholin's cyst

Prolapse of uterus  
Rectocele  
Cystocele and rectocele

Urethral caruncle  
Ruptured perinaeum

# VI. PREGNANCY AND ITS AC-

CIDENTS.  
Pregnancy

In 1 case the tumour was of very large size, and abdominal hysterectomy was performed with a fatal result; in a second case the uterus was removed *per vaginam*, and in the remaining 2 cases the disease was too extensive for any operative treatment.

The vaginal portion was the part affected, and was treated by amputation.

Patient refused operative treatment.

Patient died suddenly, while being examined, from an attack of syncope. The autopsy showed the presence of chronic renal disease.

Abscess incised and plugged with iodoform gauze.

In each case the cyst was suppurating. 1 case was dissected out entire; the other had burst before admission, and healed by granulation.

1 case was treated by anterior and posterior colporrhaphy; the other was relieved by introduction of a pessary.

All the cases were removed with scissors, and the cantery afterwards applied to the base.

All except 1 case were treated by the usual operation for lacerated perinaeum.

Abdominal section had been performed on this patient on 25th April, 1895, for double salpingitis with intra-peritoneal abscess. Catamenia were regular from July up till October, after which she had amenorrhoea. She was found on examination to be 3 months pregnant.

TABLE II—continued.

DISEASE.	Number of cases	Age.		Duration of residence.						Cured.	Relieved.	Unrelieved.	Died.	REMARKS.			
		10-20	30-40	Above 60	Under 1 wk.	1-2 weeks	2-4 weeks	1-2 months	Above 2 ms.								
VI. PREGNANCY AND ITS ACCIDENTS—continued.																	
Hydramnios . . .	1	1							1					Labour induced by rupturing membranes. 11 pints of amniotic fluid evacuated.			
Vomiting during pregnancy	1		1						1								
Contracted pelvis .	2	1	1					1	1				1	In 1 case abortion was induced at the 5th month; in the other cases Casarean section was performed.			
Laceration of vaginal wall during parturition	1			1					1								
Threatened abortion	4	2	2			1	3			4				In 3 of the cases abortion was induced on account of the persistence of the hæmorrhage. In the 4th case the hæmorrhage stopped with rest.			
Missed abortion	1		1						1					Abortion induced.			
Incomplete abortion .	13	1	6	4	2	2	7	4		12			1	All the cases with one exception were treated by dilatation and exploration of the uterine cavity. In the fatal case the patient died from peritonitis.			
Pregnancy with pyrexia .	1	1								1				Abortion was induced in this case at the 5th month.			
Septicæmia following parturition	2	1	1			2				1			1	1 case left the hospital at her own request; the other case was transferred to the infectious block and cured after treatment with antistreptococcus serum.			
Mania following abortion .	1		1				1						1	The miscarriage occurred on 12th December, 1895. A fortnight after this suppurative parotitis developed with pelvic cellulitis. At this time her mind began to wander, and on admission three weeks later she was in a condition of mania.			



## VII. VARIOUS.

Dysmenorrhœa . . .	9	1	5	3	...	1	3	3	2	...	9	...	...	...	In 8 cases the cervical canal was dilated with graduated sounds, and in 5 of these the dilatation was followed by introduction of stem pessary.
Menorrhagia . . .	7	...	3	2	1	...	1	1	2	4	...	7	...	...	3 of the cases were treated by dilatation of cervix followed by curetting. In 1 case the menorrhagia was symptomatic and associated with purpura.
Constipation . . .	2	...	2	...	...	...	1	1	...	...	...	2	...	...	
Colic . . .	1	...	...	1	...	...	...	1	...	...	...	1	...	...	
Abscess around ligature after laparotomy	1	...	1	...	...	...	...	...	1	...	...	1	...	...	Treated by incision and drainage (see Special Table III).
Phantom tumour . .	2	...	2	...	...	...	2	...	...	...	...	...	2	...	
Retro-uterine tumour	1	...	1	...	...	...	1	...	...	...	...	...	1	...	
Retro-peritoneal cyst	1	...	1	...	...	...	...	...	1	...	...	1	...	...	Treated by abdominal section.
Malignant tumour of abdomen	6	...	1	4	1	...	3	1	1	1	...	...	5	1	In 2 of the cases abdominal section was performed; in 1 of these the tumour was removed; in the other it was found impossible to attempt any removal of the disease.
Febricula . . .	1	...	...	1	...	...	...	1	...	...	...	1	...	...	
Incontinence of urine	1	...	1	...	...	...	...	...	1	...	...	1	...	...	The incontinence was thought to be due to a uretero-cervical fistula.
Floating kidney . .	1	...	1	...	...	...	1	...	...	...	...	...	1	...	
Necrosis of ilium . .	1	...	1	...	...	...	...	1	...	...	...	...	1	...	
Pelvic neuralgia . .	2	...	2	...	...	...	2	...	...	...	...	2	...	...	
Neurasthenia . . .	2	...	1	1	...	...	2	...	...	...	...	1	1	...	Transferred to Medical ward.

TABLE III.—*Operations performed during the Year.*

## Abdominal section :

Cystic adenoma of ovary . . . . .	18
Papillomatous tumour of ovary . . . . .	2
Parovarian cyst . . . . .	6
Suppurating cyst of ovary . . . . .	1
Dermoid cyst of ovary . . . . .	2
Carcinomatous cyst of ovary . . . . .	1
Salpingitis . . . . .	7
Pyosalpinx . . . . .	3
Tubo-ovarian abscess . . . . .	1
Tubal gestation . . . . .	6
Fibro-cystic tumour of broad ligament . . . . .	1
Hysterectomy for uterine fibroids . . . . .	5
Myomectomy for uterine fibroids . . . . .	1
Oöphorectomy for uterine fibroids . . . . .	2
Hysterectomy for carcinoma of uterine body . . . . .	1
Cæsarean section . . . . .	1
Retro-peritoneal cyst . . . . .	1
Malignant tumour of abdomen . . . . .	1
Exploratory incision :	
Pelvic cellulitis . . . . .	1
Abscess round ligature after laparotomy . . . . .	1
Malignant tumour of abdomen . . . . .	1 = 3
	<hr/>
	63
Vaginal hysterectomy for cancer of body of uterus . . . . .	1
"                    "                    of cervix . . . . .	4
Amputation of cervix for hypertrophic elongation . . . . .	1
Enucleation of fibroid . . . . .	1
Polypus uteri (fibroid) . . . . .	8
"    "    (mucous) . . . . .	4
Ruptured perinæum . . . . .	12
	<hr/>
Total . . . . .	94

TABLE IV.—*Causes of Death in Fatal Cases.*

Shock and collapse after abdominal section for (1) suppurating cyst of ovary; (2) carcinomatous cyst of ovary; (3) pelvic peritonitis secondary to old ruptured tubal gestation; (4) abdominal hysterectomy for fibroids; (5) abdominal hysterectomy for cancer of uterine body; (6) retro-uterine sarcoma . . . . .	6
Exhaustion following abdominal section for (1) malignant papilloma of ovary; (2) fibro-cystic tumour of broad ligament . . . . .	2
Peritonitis following (1) abdominal section for cystic adenoma of ovary; (2) Cæsarean section . . . . .	2
Peritonitis following exploration of interior of uterus in case of incomplete abortion . . . . .	1
Pulmonary embolism on 19th day after laparotomy for uterine fibroids . . . . .	1
Cardiac syncope during examination of a patient (without anæsthesia) . . . . .	1
Total . . . . .	13

## ABDOMINAL SECTION, INCLUDING OVARIOTOMY.

During the past year sixty-three abdominal sections have been performed. On referring to the special tables it will be seen that thirty of these were operations performed for ovarian or broad ligament tumours, seventeen were undertaken for diseased conditions of the Fallopian tube, and the remaining sixteen comprised operations for uterine tumours, malignant tumours of the pelvic organs, one case of Cæsarean section, and various exploratory laparotomies.

Out of the thirty abdominal sections included in the first special table, twenty-six recovered and four died. In the first fatal case, No. 12, the patient died from shock and collapse twenty-four hours after an operation for a suppurating cystic tumour of the ovary. The patient had had a discharging sinus situated below the umbilicus for five years before her admission. The operation was rendered very severe owing to the very dense adhesions of the tumour to the omentum, intestine, and surrounding structures. The second fatal case occurred in a patient fifty-one years of age, of rather feeble constitution, from whom a large cystic

adenoma of the ovary was removed. Slowly spreading peritonitis supervened, and the patient died on the sixth day after the operation. The fatal result in the third case took place four hours after an operation for removal of a carcinomatous cyst of the ovary. The disease was very extensive, and was found to infiltrate the body of the uterus. An abstract of this case is given. In the fourth case the patient died from gradual asthenia one month after operation for papillomatous cyst of both ovaries ; in this case pleural effusion developed after the operation.

The results of the seventeen operations for diseases of the Fallopian tube were very satisfactory ; sixteen recovered and one died. The sixteen successful cases comprised seven operations for chronic salpingitis, three for pyosalpinx, five operations for tubal gestation, and one for tubo-ovarian abscess. The case which terminated fatally was operated upon for recurrent attacks of pelvic peritonitis following a tubal gestation which terminated by rupture eight months before admission. No operation was performed at the time of primary rupture, but the patient was very dangerously ill for some weeks. Subsequent to this she had two further attacks of severe pelvic inflammation. The operation, which consisted in the removal of the old ruptured tube together with some old blood-clot, was very severe owing to the density of the adhesions and the vascular condition of the parts. She died of shock thirty hours after the operation. Six cases in all, therefore, were operations undertaken for the results of gestation in the Fallopian tube, and in three of these the foetus was discovered and removed. Detailed reports of Cases No. 1 and No. 12 in this table are given.

The third special table includes eight operations undertaken for the treatment of fibro-myomatous tumours of the uterus. In five of these abdominal hysterectomy was performed ; in one case myomectomy, and in the remaining two oöphorectomy was the treatment selected. Two out of the five cases of hysterectomy died ; one from shock and collapse fifteen hours after the operation, and the other from pulmonary embolism on the nineteenth day after the operation. The patient in whom myomectomy was performed had two large subperitoneal fibroids of the uterus,

which were increasing rapidly in size, and causing severe attacks of abdominal pain. Four out of the remaining eight cases terminated fatally. The first of these, No. 4, was due to peritonitis following Cæsarean section for contracted pelvis. The second, No. 8, died from shock forty-eight hours after hysterectomy for carcinoma of the body of the uterus. The third, No. 12, occurred after operation for a large fibro-cystic tumour of the broad ligament in a patient fifty-six years of age. Diarrhœa set in three days after the operation, and greatly exhausted the patient. After this thrombosis of the left axillary vein occurred, together with loss of control over the rectum. The patient got steadily weaker in spite of free stimulation, and died seventeen days after the operation. The site of the operation was found perfectly healthy at the autopsy. The fatal result in the last case, No. 16, was due to shock following an operation for the removal of a large sarcomatous tumour behind the uterus, which was found to involve the intestine. An anastomosis was made with Murphy's button, but the patient succumbed before the operation was completed.

So far as the general technique of the abdominal operations is concerned, there are no changes to record. The limitation in the use of the douche and drainage-tube is still further evident. The absorbent power of the peritoneum is relied upon where the hæmorrhage or oozing after operation is not excessive. Compared with the two preceding years, drainage has been used in  $8\frac{1}{2}$  per cent. of the cases, as against 20 per cent. in 1894, and 11 per cent. in 1895; the douche has been employed in only 13 per cent. of the operations, whereas in 1894 it was used in 20 per cent., and in 1895 in 36 per cent.

The use of the continuous catgut suture to bring into apposition the cut edges of the rectal aponeurosis continues to give very satisfactory results, and it is hoped that in time this will prove to be the best safeguard against the development of ventral hernia.



SPECIAL TABLE I.—*Abdominal Section for Ovarian or Broad-ligament Tumours.*

No.	Name.	Residence.	Age.	Civil condition.	Date of operation.	Nature, &c., of tumour.	Adhesions.	Condition and treatment of other ovary.	Glass drainage tube.	Peritonium flushed.	Result.	Remarks.
1	M. C.	Wimbledon	43	S.	1895 Dec. 19	Multilocular cystic adenoma of left ovary, weighing 5 lbs. 6 oz.	Slight adhesions to omentum	Normal; removed	No	No	R.	The second ovary was removed, as there was found to be a fibroid tumour situated at the fundus uteri. Patient had some exudation into the broad ligaments, causing temperature varying from 100° to 102.5° during the second week after operation. It caused very little discomfort, and patient made a good recovery.
2	M. A.	Stockwell	44	M.	Dec. 27	Papillomatous cyst of both ovaries; ascites (12 pints)	None	See "Nature of tumour"	No	No	D.	Patient developed some effusion into the left pleural cavity after the operation, and on the 14th January 43 ounces of blood-stained fluid was removed. Patient gradually got weaker, and died on 26th January. See "Abstract."
3	M. A.	Balham	76	W.	1896 Jan. 7	Broad-ligament cyst of left side	None	Atrophied	No	No	R.	Patient had a normal convalescence.
4	A. S.	Barking, Essex	39	M.	Jan. 23	Parovarian cyst on right side; dermoid cyst of left ovary	Stringy bands over whole surface of tumour to omentum and intestine	See "Nature of tumour"	No	No	R.	Normal convalescence.

5 M. B.	Old Ford	37	M.	Jan. 24	Infamed cystic adenoma of left ovary; multiple small abscesses in wall in region of the pedicle	Recent over whole surface	Normal	No	No	R.	The acute inflammation in the cyst followed confinement, which occurred on 25th Dec., 1895. She got up 10 days after child was born, but had to return to bed on account of pain and febrile symptoms. Temperature was 104° on admission. She made an excellent recovery.
6 M. R.	Lambeth	28	S.	Feb. 8	Cystic adenoma of right ovary; twisted pedicle; intra-cystic hæmorrhage	Few recent adhesions	Normal	No	No	R.	Convalescence was interrupted till the 5th day after operation, when vomiting set in, and was extremely severe for about 24 hours. It was relieved by medicine and enemata.
7 E. H.	Camden Town	34	M.	March 12	Parovarian cyst of left side; twisted pedicle; intra-cystic hæmorrhage	None	Normal	No	No	R.	Patient made an uninterrupted recovery.
8 A. F.	Boston, Lincs.	59	M.	March 30	Malignant papilloma of ovary; ascites	Numerous adhesions due to growth	See "Remarks"	No	No	R.	Patient had been operated on in April, 1894, for papilomatous cyst of both ovaries, and remained perfectly well till Christmas, 1895, when the abdomen began to enlarge again. At the second operation on the 30th March, 1896, 13 pints of ascitic fluid were removed, but recurrent papillomatous growth was found studded over peritoneum.

No.	Name.	Residence.	Age.	Civil condition.	Date of operation.	Nature, &c., of tumour.	Adhesions.	Condition and treatment of other ovary.	Glass drainage tube.	Peritonium flushed.	Result.		Remarks.
9	A. K.	Epsom	30	S.	April 1	Right broad-ligament cyst; dermoid cyst of right ovary	Very firm old adhesions to abdominal wall, intestine, &c.	Normal	No	No	R.		Patient made an excellent recovery.
10	E. P.	Gillingham, Dorset	24	S.	April 30	Cystic adenoma of right ovary; weight 9½ lbs.	None	Normal	No	No	R.		Urine before operation contained a small amount of albumen. This amount diminished slightly 10 days after operation, but a week later it increased again, and remained stationary till the time of patient's discharge on 3rd June, 1896. Uninterrupted recovery.
11	A. C.	Fulham	23	M.	May 8	Cystic adenoma of left ovary	None	Normal	No	No	R.		
12	K. D.	Eastbourne	29	S.	May 11	Tumour (? inflamed blood-cyst) of ovary; suppurated cyst; omentum, intestines, &c. sinus discharging below umbilicus	Very firm to omentum, intestines, &c.	Normal	Yes	Yes	D.		Patient died of shock 24 hours after operation.
13	E. C.	Regent's Park	27	M.	May 28	Cystic adenoma of left ovary	None	Normal	No	No	R.		About one hour after operation patient was observed to be very blanched, with weak thready pulse. Internal hæmorrhage was suspected, and abdomen was reopened. The ligature was found to have slipped. Pedicle was ligatured again, blood removed from pelvis,

14	M. S.	Torrington 36	S.	June 4	Cystic adenoma of left ovary, weighing 17 lbs.	None	Normal	No	No	R.	and 3 pints of saline solution transfused. Patient made an excellent recovery. Uninterrupted recovery.
15	E. S.	Hastings 51	W.	June 11	Cystic adenoma of right ovary; weight 17 lbs.	Adhesion to anterior abdominal wall	Normal, but adherent	No	No	D.	Patient had some distension on the day after the operation, and on the following day this increased, and vomiting set in. No relief was obtained by means of enemata. Rectal feeding was resorted to, but the patient gradually got weaker and more collapsed. She died on the 6th day from slowly spreading peritonitis.
16	F. J.	St. Mark's, 33 Lanes.	M.	June 18	Cystic adenoma of the right ovary, weighing 37½ lbs.	Rather firm adhesions to anterior abdominal wall	Contained a small cyst, which was punctured	No	No	R.	Patient had a normal convalescence.
17	J. T.	Lewes 26	S.	July 2	Parovarian cyst of right side, containing 9 pints of fluid	None	Not reported	No	No	R.	Convalescence quite satisfactory.
18	A. B.	Clapham 31	M.	July 9	Cystic adenoma of right ovary	None	Normal	No	No	R.	Patient made an uninterrupted recovery.
19	M. S.	Streatham 51	M.	July 23	Cystic adenoma of right ovary	A few adhesions to omentum	Normal	No	No	R.	Patient made a good recovery. She was unable to pass urine naturally till 11 days after the operation.
20	A. W.	Saffron Walden 39	S.	July 30	Multilocular cystic adenoma of right ovary, weighing 6 lbs. 6 oz.	None	Normal	No	No	R.	Normal convalescence.

No.	Name.	Residence.	Age.	Civil condition.	Date of operation.	Nature, &c., of tumour.	Adhesions.	Condition and treatment of other ovary.	Glass drainage tube.	Peritonium flushed.	Result.	Remarks.
21	S. D.	Epsom	42	M.	July 30	Parovarian cyst of right side	None	Not examined	No	No	R.	The cyst had to be enucleated from the broad ligament. Patient was very collapsed after the operation, and Liq. Strychnine were injected hypodermically every 4 hours during the first 24 hours after operation. After this she gradually improved and made a good recovery.
22	M. K.	Camberwell	53	M.	Aug. 7	Malignant disease of both ovaries, with infiltration of retro-peritoneal glands	Adhesions to omentum and to back of uterus	See "Nature of tumour"	No	No	U.	Although the case was thought to be malignant, an exploratory operation was performed to see whether it were possible to remove the disease. The parietal peritoneum was also found to be studded with carcinomatous nodules, so no attempt was made at removal.
23	M. G.	Southboro', Kent	36	M.	Aug. 13	Multilocular cystic adenoma of left ovary, containing 11 pints of fluid	None	Normal	No	No	R.	Normal convalescence.
24	M. S.	Winslow, Bucks	45	S.	Aug. 13	Parovarian cyst of right side	None	Normal	No	No	R.	Patient was seriously troubled with retching and vomiting after the operation, which continued for 48 hours. The symptoms were relieved by enemata and Col. ð Hyoscyam. pills.



25	A. B.	Kingston	34	M.	Aug. 27	Multilocular cystic adenoma of left ovary	None	Normal	No	No	R.	The lower part of the cyst had burrowed to some extent between the layers of the broad ligament. It was therefore found necessary to enucleate this portion, and the pedicle thus formed was ligatured in three portions. Patient had a very sharp attack of bronchitis after the operation, but she gradually improved with expectorant mixture and free stimulation. She was discharged cured on the 18th September.
26	E. C.	Battersea	60	W.	Aug. 27	Multilocular cystic adenoma of left ovary	None	Normal, but atrophied	No	No	R.	Uninterrupted recovery.
27	J. S.	Lambeth	38	M.	Sept. 11	Inflamed cyst of left ovary	Firm adhesions to pelvic wall and to back of uterus	Normal, but slightly adherent	No	No	R.	Normal convalescence.
28	C. B.	Lambeth	28	M.	Oct. 29	Dermoid cyst of right ovary, containing 13 pints of fluid	Recent adhesions in pelvis	Normal, but adherent	No	No	R.	On 14th Aug., 1896, abdominal section was performed for ruptured tubal gestation on left side; at that time the right ovary was normal. At the second operation on 30th Nov. a small inflamed cyst was found to have developed in this ovary.
29	C. C.	Peckham	24	M.	Nov. 30	Cystic adenoma of right ovary	Strungy adhesions to intestine, omentum, &c.	See "Remarks"	No	No	R.	See "Abstract."
30	A. C.	Hungerford, Berks	37	S.	Dec. 18	Carcinomatous cyst of right ovary infiltrating uterus and broad ligament; solid tumour of left ovary; ascites	Adhesions to abdominal wall	See "Nature of tumour"	Iodoform gauze drain	No	D.	

CASE 2. *Papillomatous cyst of both ovaries; ascites; abdominal section; development of pleural effusion after operation; death from asthenia on the thirtieth day after operation* (from notes by R. G. Strange).—M. A—, æt. 44, married, residing at Stockwell, admitted 23rd December, 1895; died 26th January, 1896.

Catamenia commenced at the age of twelve; periods recurred every twenty-eight days, the flow lasting four or five days, normal in quantity. Married for the first time at the age of eighteen, and had one child by the first husband. She was married a second time at the age of thirty, but has not been pregnant again. She has been quite regular in her periods since. The present illness dates from three weeks ago, when she noticed that her abdomen was getting larger; she had a little pain, chiefly on the left side. She continued at her work up till the 19th December, but the swelling of the abdomen increased so rapidly that she had to loosen her clothing. Her girth increased ten inches in a fortnight. Latterly the pain has become much more severe. The bowels have been quite regular.

On admission the patient was a fairly healthy-looking woman, though thin. Nothing abnormal was detected in the lungs. The abdomen is prominent, and uniformly distended; the umbilicus is prominent, and the belly walls somewhat œdematous. On palpation the abdomen is very tense and tender, especially on deep palpation. A thrill is readily obtainable. There is dulness in both flanks, which shifts on movement. There is dulness above the pubes to within four inches of the umbilicus. The maximum girth at the umbilicus is  $36\frac{1}{2}$  inches. On vaginal examination the uterus is found to be quite fixed, the cervix being pushed over to the right side. In front and to the left side of the cervix can be felt an irregular fixed growth of cartilaginous hardness. The upper limit of this growth cannot be made out owing to the presence of the ascites. The urine is acid; no albumen.

*Abdominal section* (December 27th).—An incision  $3\frac{1}{4}$  inches long having been made between umbilicus and pubes, the tissues were divided down to the peritoneum, into which a small opening was made. About twelve pints of clear

yellow ascitic fluid were allowed to escape. During the escape of this fluid the patient ceased breathing, but respirations soon recommenced after artificial breathing had been resorted to. The incision was now enlarged, and the condition of the pelvis explored. The body of the uterus was found pushed over to the left by a mass of papillomatous growth which filled the whole pelvis, and was adherent to the back of the uterus. This growth was springing from the right appendages. Arising from the left appendages was a somewhat similar mass, which was partly cystic and partly of a cauliflower-like growth. The latter was first brought out through the incision, its pedicle secured with a double silk ligature, and the mass removed. The growth connected with the right appendages was now treated in a similar manner. After sponging the pelvis dry, the left Fallopian tube was seen to be œdematous, and was therefore removed after transfixing the broad ligament, and tying the pedicle in two portions. A douche of boracic at a temperature of 110° F. was now given to clear away any small pieces of growth. At the end of the operation the uterus still remained quite fixed, with a little ridge of growth on its anterior surface which caused it to be adherent to the parts in front. The abdominal wound was closed with six silkworm-gut sutures, and the edges of the rectal aponeurosis brought together by a continuous suture of catgut. The operation lasted one hour and a half.

The parts removed on the right side consist of a mass of thin-walled cysts, varying in size from an orange downwards. In parts the walls of the cyst are covered with a friable, semi-translucent, proliferating growth. In one part the projecting mass of growth reaches the size of a duck's egg. The fluid contained in the cysts is clear. On the left side the mass removed is made up of a number of small cysts held together by strong septa of fibrous tissue. On the external surface of the cysts is seen a quantity of the same growth as on the right side, and on the inner surface also patches of proliferating growth are seen scattered irregularly, which in some cases completely fills the cysts.

December 28th.—Temp. 98·6°. Patient has had some slight shooting pain across the abdomen, but feels easier

and has slept well. The urine has been passed naturally. There has been no sickness.

30th.—Patient's general condition continues to be satisfactory. Temperature is normal, and pulse is 102. An enema was given with good result last night. She has some swelling and œdema of her right leg and foot.

January 2nd, 1896.—The leg is less swollen, but the right foot is still œdematous. She complains of pain at the back of her right knee. She is feeling very much better.

3rd.—The œdema of the foot is about the same. There is some increase in the size of the abdomen to-day, and the wound is seen to be a little prominent. A thrill is detected. The stitches were removed to-day.

4th.—During the night patient awoke feeling that she was wet, and on removing the bandage a discharge of ascitic fluid was seen to be issuing from the upper part of the wound. The first two ounces which escaped were coloured red; after that the fluid was quite clear. The wound was brought together with strapping.

5th.—Ascitic fluid still comes from aperture in wound. The swelling of the abdomen is, however, much less. A silkworm-gut suture was passed deeply, so as to close the aperture in the abdominal wall.

7th.—Very little discharge in the dressing to-day. There is some soreness on each side of the sacrum, and the skin is slightly excoriated.

10th.—Patient feels better. The temperature has not risen above 99° since the 5th. The slight excoriation over sacrum is looking quite healthy.

11th.—There is still some serous non-offensive discharge from the abdominal wound. The temperature rose to 100·6° last night.

13th.—Patient has no cough, but the respirations have increased in frequency. On examination the chest is found dull on the right side up to the angle of the scapula; there is no vocal fremitus, and the breath-sounds are very weak. The pulse was 118 and respirations 30. Forty-three ounces of fluid were removed with aspirator, after which the patient was greatly relieved.



15th.—Patient is more comfortable, though the breathing is still rapid—36 respirations per minute. The right side of the chest is still dull up to the angle of the scapula. Rhonchi and coarse crepitations are heard over the lower part of the chest.

18th.—All discharge from the abdominal wound has now ceased. The patient looks better, but is greatly emaciated. Pulse 118, resp. 28. The abdomen is somewhat distended, and the muscles rigid, but there is no dulness.

21st.—Patient has been moved on to the sofa the last two evenings, but she is still very weak, and the breathing is somewhat embarrassed.

23rd.—She looks much weaker to-day, and was very restless during the night. The temperature is normal, but the pulse and respirations are hurried. The bowels are much constipated, and have to be relieved by enemata.

25th.—The abdomen is considerably distended, especially above the umbilicus. Some thickening is felt, which is apparently due to thickened omentum and adherent intestine. Patient has been sick several times to-day.

26th.—Patient was aspirated again yesterday, and twenty-six ounces of fluid removed from the pleural cavity. This was only followed by slight relief, and she got gradually worse and died early this morning.

*Autopsy.*—The abdomen was considerably distended. The peritoneal cavity was completely obliterated by adhesions. The liver and intestines were closely and firmly adherent to the abdominal wall, so that the separation of the adhesions was extremely difficult. No encysted collection of fluid was found. The left pleura was thickened at the base and elsewhere; the thickening, however, appeared to be limited to the parietal layer, and there was no difficulty in separating the lung from it. The base of the lung was collapsed. The loin, kidneys, and spleen showed nothing abnormal.

CASE 30. *Carcinomatous cyst of the right ovary, infiltrating broad ligament and uterus; abdominal section; death from shock* (from notes by G. D. Howlett).—A. C—, æt. 37, single, residing at Hungerford, Berkshire, admitted 14th December, 1896; died 18th December, 1896.



Catamenia began at the age of thirteen ; always regular ; duration five or six days. The present illness began one year ago, when patient began to notice an increase in the menstrual flow, which up to that time had been quite regular. The duration of the periods was also increased to seven or eight days. She had occasional attacks of pain at her periods. Two months later she first observed that her stomach was getting larger at the lower part, and more especially on the right side. Gradually the pain at her periods got worse, and she found it necessary to lie down at her periods, though she never actually went to bed. Six months ago she began to have difficulty in passing her water, together with desire to pass it frequently. At no time has she had any incontinence of urine. In September last she was admitted to the Grosvenor Hospital for Women with a view to operation. After being in a week, however, she developed scarlet fever, and was removed to the Stockwell Fever Hospital. She remained there for eleven weeks. As she was unable to get in at the Grosvenor Hospital, she was recommended to St. Thomas's. For a fortnight before her admission her abdomen has been getting much larger ; there has also been some dyspnœa, loss of appetite, and sleeplessness. Her bowels have been constipated. She does not think that she has lost flesh.

On admission patient is a thin, anæmic woman, with an anxious expression, complaining of swelling of the abdomen. The face is very pale and somewhat cyanosed. Respirations are shallow and rapid. The abdomen is found uniformly distended, the skin over it being smoother than normal. Enlarged veins are seen running up on either side. Over the whole abdomen below the umbilicus a fluid thrill can be obtained. On palpation a hard lobulated mass is felt to occupy the lower part of the abdomen ; this mass is more obvious in the middle line above the pubes, where it is in contact with the abdominal wall, than on either side, where a layer of fluid seems to intervene between the tumour and the abdominal wall. The mass extends upwards on the right side to a level of  $11\frac{3}{4}$  inches above the pubes. On the right side laterally a rounded edge is felt ; the upper edge of the mass is less distinct. There is dulness in both flanks,

and up to the level of the umbilicus in the middle line. The greatest girth at the level of the umbilicus is 38 inches. The urine is acid, sp. gr. 1028; contains no albumen or sugar. The vagina is shallow, but no part of the tumour projects into it; the vaginal portion of the cervix is short, especially the anterior lip.

December 16th.—The patient is still pale and cyanosed, and feels worse than yesterday. The pulse is 120, very soft, though fairly full. Breathing is shallow, 24 per minute.

17th.—Patient is much more distressed with her breathing to-day; she is pale and cyanosed. Pulse 120, soft and compressible; respirations 26 per minute.

18th.—Patient is no worse than yesterday. The abdomen is, however, somewhat more tense to-day. The general condition has been maintained only by free stimulation with brandy. Owing to the urgency of the symptoms, it was decided to operate at once.

*Abdominal section* (December 18th).—Incision in middle line three inches long. On opening the peritoneum a flow of ascitic fluid escaped. The tumour was found to be attached to the anterior abdominal wall by friable adhesions. The cyst was then tapped with a trocar, and about three pints of clear brownish fluid were removed. The cystic portion of the tumour then almost collapsed. Owing to the presence of a large solid mass forming part of the tumour, the incision had to be enlarged to allow the tumour to be drawn outside. The broad ligament close to the uterus was much thickened, and was transfixed with a pedicle needle. It was then tied in two portions, but was found to be extremely friable, due to infiltration with growth from the uterus. The left ovary was now found to be enlarged to the size of a normal kidney and the seat of a solid new growth. It was free from adhesions, and its pedicle was easily secured with a double ligature after transfixing the broad ligament. There was a considerable amount of oozing around the situation of the right stump, and as the friable nature of the parts prevented its being controlled by pressure forceps, it was decided to plug with strips of iodoform gauze. During the latter part of the operation the patient's

condition showed signs of grave collapse, and two pints of saline solution were infused into the basilic vein. After the operation patient was got back to bed, hot bottles were applied, and restorative measures resorted to, but the patient got quickly worse, and died at 9.30 p.m., about four hours after the completion of the operation. The parts removed from the right side consist of a large, partly solid and partly cystic tumour of the right ovary with the Fallopian tube and mesosalpinx. The outer surface of the tumour is very irregular, partly from tags of adhesion, which have been separated, and partly owing to numerous small nodules of growth which project from the wall of the cyst towards the peritoneal aspect. At one part there is a secondary lobule about the size of a large walnut, filled with soft pulpy growth. On laying open the cyst it is seen to consist of one large sac, on the inner surface of which masses of soft friable growth are seen to project. In the region of the pedicle the growth is very friable, and invades the whole thickness of the broad ligament. The tumour removed from the left side is about the size and shape of a normal kidney. The outer surface is smooth, and on section the tumour has a pearly fawn colour similar to the appearance of an amyloid kidney.

*Autopsy.*—On opening the abdomen very little blood is found in the abdominal cavity. The uterus is slightly enlarged; its posterior surface is ragged, and on cutting into the organ it is evident that the posterior wall is extensively infiltrated with a medullary new growth, the infection starting from without. The retro-peritoneal glands are the seat of disease, and form a mass as large as a closed fist. The neoplastic tissue is so soft as to be almost diffluent, and is red in colour. The kidneys and spleen are normal. The liver is very soft and pale; there are several nodules of new growth scattered through it. The parietal pericardium is the seat of several small nodules of growth. The heart is of normal size and proportions. The pleuræ are healthy. In both lungs there are numerous deposits of the same soft red growth, and the glands at the root form a considerable mass. The largest single deposit in the lung is about the size of a Barcelona nut.

SPECIAL TABLE II.—*Abdominal Section for Diseases of Fallopian Tubes.*

No.	Name.	Residence.	Civil condition.	Date of operation.	Nature of disease.	Nature of operation.	Glass drainage tube.	Periton. flushed.	Result.	Remarks.
1	J. P.	Orpington, Kent	M.	1895 Dec. 12	Left pyosalpinx; pelvic peritonitis	Left ovary and tube removed	Rubber tube	Yes	R.	See "Abstract."
2	E. P.	Brixton	M.	Dec. 13	Right salpingitis	Right tube and ovary removed	No	No	R.	Patient made an uninterrupted recovery.
3	L. F.	Hammer-smith	S.	1896 Jan. 2	Double salpingitis; pelvic peritonitis	Right Fallopian tube with suppurating cyst of right ovary removed; ovary and tube on left side freed from adhesions, but otherwise healthy	No	No	R.	The adhesions to the part of the uterus and broad ligament were very extensive, but the tumour was removed without rupture of the cyst. The temperature only once reached 100° F., viz. on the day after the operation.
4	E. E.	Brixton	M.	Feb. 27	Tubal gestation on right side; hæmato-salpinx; pelvic hæmatocele	Right Fallopian tube with a portion of inflamed omentum removed	No	Yes	R.	Patient suffered rather severely from shock during the first 24 hours after operation, and was very sick during the night. She then gradually improved, and was quite strong and well 3 weeks after operation.
5	G. B.	Deptford	M.	Mar. 6	Double salpingitis; pelvic peritonitis	Left Fallopian tube with small inflamed ovarian cyst removed	No	No	R.	The appendages on the right side were very adherent to the surrounding parts, but were not otherwise diseased.



No.	Name.	Residence.	Age.	Civil condition.	Date of operation.	Nature of disease.	Nature of operation.	Glass drainage tube.	Periton. flushed.	Result.	Remarks.
6	L. H.	East Dulwich	34 M.		1896 Mar. 26	Old ruptured tubal gestation	Left Fallopian tube with small fetus and small amount of old blood-clot removed	Yes	No	D.	Patient had a severe illness in July, 1895, due to primary rupture of a tubal gestation. She recovered from this without operation, but had two succeeding attacks of acute pelvic inflammation in November, 1895, and February of the present year, for the latter of which she was admitted to the hospital. The operation was very severe owing to the density of the adhesions, and the patient succumbed to shock 36 hours after the operation.
7	E. W.	Old Kent Road	23 M.		May 14	Chronic salpingitis and broad-ligament cyst on right side; chronic left salpingitis	Both tubes removed with broad-ligament cyst of the right side	No	No	R.	Some exudation occurred around the pedicle on the left side after the operation, accompanied by fever varying from 99° to 102°. This continued for a fortnight, after which the temperature was normal, and patient made a good recovery.
8	E. B.	Lambeth	27 M.		May 21	Tubal mole; hæmato-salpinx; pelvic hæmatocele	Left tube and ovary removed with 7 oz. of clotted and 5 oz. of dark fluid blood	No	Yes	R.	The temperature rose to 102° on the day following the operation. It remained high the next day, and some pneumonic consolidation was discovered at the base of the left lung. The temperature and chest symptoms subsided by the 5th day, and patient made a good recovery.
9	C. C.	Peckham	24 M.		Aug. 14	Tubal gestation; rupture at 8th week; intra-peritoneal hæmorrhage	Ruptured tube of left side removed, together with about 12 oz. of liquid and clotted blood	No	Yes	R.	Patient made an uninterrupted recovery after the operation, and was discharged cured at the end of 3 weeks. Three months later she was readmitted for an inflamed ovarian cyst which had developed in the



10	L. S.	Brixton	25	M.	Aug. 25	Right chronic salpingitis; inflamed cyst of right ovary	Tube and ovary of right side removed	No	No	R.	right ovary. The abdomen was re-opened on November 30th (see Special Table I, No. 29). Normal convalescence.
11	M. W.	Peckham	43	M.	Sept. 8	Tubal gestation; primary rupture followed by intra-ligamentous gestation on right side	Fœtus of 3rd month with placenta removed together with Fallopian tube and as much of sac as possible	No	Yes	R.	Patient made an uninterrupted recovery.
12	B. G.	Wandsworth	47	M.	Sept. 11	Tubo-ovarian abscess on left side; right hydrosalpinx; fibroid tumour of uterus	Appendages of both sides removed	No	No	R.	See "Abstract."
13	L. W.	Hampstead	48	M.	Sept. 11	Inflamed and adherent Fallopian tube following ovariectomy 4 years previously	Inflamed tube and cystic ovary of left side removed	No	No	R.	Patient had suffered from attacks of abdominal pain and vomiting at the menstrual periods ever since the operation 4 years before. At the operation on 11th September the distended Fallopian tube was found very firmly adherent to a coil of small intestine, which possibly caused some kinking at the monthly periods. May, 1897.—Patient has been quite relieved from attacks of pain since the operation.
14	L. K.	Parson's Green	42	M.	Sept. 17	Double salpingitis; intra-peritoneal abscess with rupture into intestine	Exploratory	No	No	R.	Patient had a discharge of pus from the rectum 3 weeks before admission. At the operation the uterus was the seat of several fibroid tumours, and the intestines were so densely adherent to the uterine appendages that it was thought inadvisable to attempt their removal. Patient had a good convalescence.
15	E. S.	Kennington	22	M.	Sept. 24	Left pyosalpinx	Left tube and ovary removed	No	No	R.	

No.	Name.	Residence	Age and condition.	Date of operation.	Nature of disease.	Nature of operation.	Glass drainage tube.	Periton. flushed.	Result.	Remarks.
16	B. Y.	Kennington	36	W.	Sept. 24	Double pyosalpinx	Both diseased tubes removed with portion of the left ovary	No	No	R. Patient made an uninterrupted recovery.
17	A. O.	Lambeth	34	M.	Nov. 5	Hæmatosalpinx; pelvic hæmatocèle	Right tube and ovary removed together with a few ounces of dark fluid blood	No	No	R. Convalescence was normal

CASE 1. *Large pyosalpinx with acute pelvic peritonitis, associated with acute maniacal condition alternating with melancholia; abdominal section; recovery* (from notes by P. Blaber).—J. P—, æt. 37, married, residing at Orpington, Kent, admitted 5th December, 1895; discharged 15th January, 1896.

Catamenia commenced at the age of fourteen; the periods have always been irregular, recurring every five or six weeks, and lasting six or seven days. Patient was married at the age of twenty-one, and ever since then has suffered pain at the menstrual periods. She has had no children or miscarriages. About a month after her marriage she had an attack of inflammation in the lower part of the abdomen, which was said to have been followed by typhoid fever; she was in bed for six weeks. Since this she has always had poor health, with liability to attacks of pain in the bowels, but has not been sufficiently ill to keep her bed. Two years after her marriage she was under treatment for a considerable time for dysmenorrhœa. Four years ago she was operated upon for the same trouble without relief. The present illness began eight weeks ago with slight pain in her left side. There has gradually developed a tender swelling in the left iliac region. The pain commenced at the time of the monthly periods, and has been very severe at times. Hot fomentations and blisters were applied for the relief of the pain, and a considerable amount of morphia was administered during her illness before her admission to the hospital. She was kept in bed the whole time, and kept on low diet.

On the 4th December Dr. Cullingworth saw the patient at her own home, and found a tender swelling in the left iliac region, which rendered that side more prominent than the other. There was a fixed, firm swelling involving the pelvic connective tissue above the vaginal roof on the left side, and causing fixation of the cervix. Both posterior fossæ were occupied by irregular swellings, that on the left side being obscured by the surrounding cellulitis, but being obviously of very considerable size. The condition was diagnosed as chronic inflammation of the uterine appendages with suppu-

ration. The patient was brought up to the hospital on the 5th December.

On admission patient is a well-nourished woman with a somewhat anxious expression and sunken eyes. A hard lump is to be felt in the left iliac region about the size of an orange ; it is rounded in outline, and pressure over it causes considerable pain. The upper limit of the mass is marked off by a line running from the lower edge of the umbilicus to the right anterior superior iliac spine. It reaches downwards nearly to Poupart's ligament. There is dulness over the lower part of the tumour. The tongue is dry and brown ; pulse-rate 104 ; respirations 26, and temperature 102°.

December 6th.—Patient has had attacks of weeping all day, but has not been noisy. During the night, however, she lost all control over herself, and kept shouting at the top of her voice. She was removed to a small ward, and had a special nurse to attend to her. She was very noisy all night, and persisted in getting out of bed ; temp. 101°.

7th.—Patient has had practically no sleep the last two nights. To-day she is quiet, but wanders in her mind.

8th.—Patient is very much more rational to-day, but did not sleep well ; temp. 99·8° ; pulse varies between 90 and 104.

9th.—Patient has been sulky and silent to-day, but she improved towards the afternoon and got quite sensible. At five o'clock she commenced to shout, apparently due to temper.

10th.—To-day the mental condition has much improved. The tongue is brown but not so dry. Patient has not been allowed to see any friends or relations up till now, but this afternoon her husband was allowed to see her. There is no apparent change in the condition of the tumour.

11th.—Patient had a very restless night, continually shouting, moaning, and trying to get out of bed. She appeared to be in great pain, which she referred to the left iliac region. Her mind was wandering the whole night. The pain was relieved by fomentations, but at midnight patient vomited some greenish-brown fluid. Patient's appearance this morning is much altered, her eyes are more sunken, she

is very restless, tossing from side to side, and complaining of great pain. The tongue is very dry, and crusted with brown sordes. The temperature this morning is  $102.6^{\circ}$ , and the pulse 128, weak and compressible.

12th.—An enema was given midday yesterday with a very good result. Later in the day a slight action of the bowels followed calomel gr. x. Patient was much quieter during the night, but had no sleep. This morning another enema was given with a fair result of flatus, but no solid faecal matter. Patient vomited a small amount of milk this morning. It has been decided to operate at once.

*Abdominal section* (December 12th).—Median incision  $4\frac{1}{4}$  inches long. On opening the peritoneum serum mixed with blood and pus welled up into the wound. On inserting the hand the whole pelvis was found full of matted viscera; the body of the uterus was completely embedded. The omentum was first separated from the mass on the left side, and during the separation of adhesions a discharge of thick foul-smelling pus took place. This led to a diminution in size in the swelling on the left side, which was thought to be a suppurating ovarian cyst. The partially collapsed cyst was now separated from the back of the uterus, and also from the floor of the pelvis. During this separation the finger of an assistant was kept in the bowel to prevent injury to the latter. The further separation was then carried out with the assistance of the operator's finger in the vagina. After a time the collapsed cyst was brought into view, and the broad-ligament pedicle made clear. The pedicle was now transfixed with a pedicle needle, tied in two portions, and the mass removed. The portion of inflamed omentum which was adherent to the cyst was now ligatured and removed. As the patient was feeling the shock of the operation, it was decided to do nothing more. All clots, which were somewhat numerous and suggestive of a previous hæmatocele, were now removed from the pelvis. The pelvic cavity was irrigated with boracic solution, and afterwards cleansed with marine sponges. The right ovary was found to be fairly healthy. The wound was finally sutured with six silkworm-gut sutures, and an india-rubber drainage-tube inserted at the lower angle of the wound.



The parts removed consist of the Fallopian tube, dilated in its outer part into a pyosalpinx. The dilated portion measures in the collapsed state  $3\frac{3}{4} \times 4$  inches. The thickness of the wall varies from  $\frac{1}{4}$  to  $\frac{5}{16}$  of an inch. The outer surface is very irregular, owing to the presence of ragged adhesions over its surface. At one portion of the wall two rounded openings are seen with ulcerated edges; it is evident that the escape of pus during the operation occurred through this opening after the separation of the adhesions to the surrounding structures. The inner surface of the dilated portion of the tube presents a pinkish-yellow colour and an irregular surface. It is everywhere covered by a layer of lymph, which can be scraped off, leaving a fairly smooth surface underneath. The undilated portion of the tube measures  $3\frac{1}{4}$  inches in length; the wall is thickened, and the lumen presents a few sacculations in places. The inner surface is not ulcerated.

After the patient was put back to bed the pulse was very rapid and difficult to feel. A teaspoonful of brandy was given every half-hour, and at 5.45 p.m. the wound was dressed. The dressings were stained with a large amount of blood-stained serum. At 8 p.m. patient was very collapsed, and had *Liq. Strychninæ m̄v* injected hypodermically; she was given small quantities of hot water, barley water, and milk.

December 13th.—Dressings were changed again at 12 last night, and were found quite soaked with blood-stained serum. She wandered all night, and was very restless. The wound was again dressed this morning, and less discharge was found on the pads. The pulse has gradually lessened in rate during the night, from 152 at midnight to 138 at 8 a.m. The patient has passed her urine naturally this morning.

14th.—Temperature subnormal all yesterday. Pulse this morning 120, improved in quality. Patient has had a much better night; *Liq. Strychninæ m̄v* has been given every six hours. Tongue is not so dry, but is still coated.

15th.—Passed urine unconsciously three times during the night. There is no distension of the abdomen, and the condition of the patient is satisfactory. The drainage-tube

was changed to-day for one of smaller size ; the discharge is small in quantity.

17th.—Dressing changed once only since yesterday morning. The discharge is somewhat offensive ; the tube was washed in carbolic lotion and returned. Patient slept very well last night ; temp. 98·6°. At 8 p.m. the wound was again dressed, and the drainage-tube left out. The pulse continues to improve.

19th.—The stitches were removed with the exception of the middle one. There is a little gaping of the upper part of the incision. The wound is to be dressed frequently.

21st.—Condition continues to be quite satisfactory. The discharge from the wound is still somewhat offensive.

22nd.—The remaining sutures were removed to-day. Discharge is purulent and less offensive. Temperature is normal.

27th.—Patient is very well. The discharge from the wound is much less, but still purulent.

29th.—Patient got up this evening and was wheeled about in a chair. She felt very weak, but was in other respects well.

January 2nd.—Patient is very well. There is a very slight purulent discharge from the abdominal wound, which is granulating up.

10th.—On examination the cervix uteri is in the normal position, but the uterus is fixed apparently from adhesion of the body to the abdominal wall near the lower end of the incision. There is nothing abnormal to be felt on the right side of the uterus or in Douglas's pouch. On the left side there is an ill-defined thickening running out in the direction of the broad ligament, but no definite swelling.

15th.—There is now only a superficial granulating wound.

CASE 12. *Left tubo-ovarian abscess ; right hydrosalpinx ; fibro-myomatous tumour of uterus ; abdominal section ; recovery* (from notes by T. Stevens).—B. G—, æt. 47, married, residing at Wandsworth ; admitted 28th August, 1896, discharged 14th October, 1896.

Catamenia began at the age of thirteen ; the periods were of the twenty-eight day type, lasting five days, and were

accompanied by a considerable amount of pain. She has had no children or miscarriages. At the age of twenty-one patient had an attack of severe "internal inflammation," and a second attack twenty years later, when she was in bed for thirteen weeks. Two years ago the periods began to be irregular, appearing every three weeks, and gradually increasing in amount and duration. The periods have continued for eight or ten days instead of five. There has also been a yellow offensive discharge, which has continued ever since. Her general health became affected, and she suffered considerable pain, which was more severe at the periods. Her symptoms became gradually worse, and from last November she has had several continuous hæmorrhages, lasting three or four weeks, and sometimes longer. For the eight weeks before her admission she has been losing blood. Micturition has increased in frequency, and has been sometimes difficult. Defecation has not been affected. On admission patient is a stout, healthy-looking woman, though somewhat anæmic. There is a thick covering of fat on the abdominal walls, but no tumour is obvious on inspection.

On the 1st September patient was examined under an anæsthetic. There is a hard, very moveable swelling about the size of an orange in the left iliac region. *Per vaginam* the cervix is found looking downwards and slightly backwards. Slightly depressing the anterior vaginal wall is a tumour the size of an orange, which is growing in the anterior wall of the uterus; it is smooth on the surface and feels quite solid, and any movement of the tumour causes movement of the cervix. The swelling which was felt in the left iliac region is found to be connected by a pedicle with the left cornu of the uterus, and appears to be a sub-peritoneal fibroid. Pressure upwards on this tumour causes dragging on the uterus. The sound passes  $3\frac{3}{4}$  inches. As it was thought that the hæmorrhage might be due to endometritis associated with fibroid tumour of the uterus, the cervical canal was rapidly dilated with Hegar's dilators, and the interior of the uterus was curetted. Patient was ordered ergot and iron mixture.

September 6th.—Patient is still losing a great deal, and complains of constant gnawing pain in the lower part of the

abdomen on the left side. She is looking more anæmic than she was, and is anxious to have something further done for her relief.

10th.—As the patient does not improve since the curetting, and the pain continues severe, it has been decided to open the abdomen with the idea of performing oöphorectomy.

*Abdominal section* (September 11th).—An incision was made in the middle line for  $4\frac{1}{2}$  inches. The rectal aponeurosis was divided and the peritoneum opened. There was a small amount of free ascitic fluid. The uterus was found bound down by bands of adhesions, which were separated. Further examination then showed what was thought to be a small ovarian tumour in connection with the left uterine appendages. All adhesions having been separated the swelling was freed, its pedicle transfixed and tied in two portions, and the tumour was removed. On examining the uterus it was found to be the seat of an interstitial fibroid. The right Fallopian tube and ovary were now separated from their adhesions and brought to the surface. The tube was seen to be very congested, tortuous, and distended. The broad-ligament pedicle was transfixed in a similar manner to that on the left side, and the appendages removed. The abdomen and pelvis were now cleansed with sponges and the abdominal wound closed with thirteen silkworm-gut sutures. Before tying these a continuous catgut suture uniting the rectal aponeurosis was inserted.

The parts removed from the right side consist of the Fallopian tube and ovary. The tube is distended to the size of the little finger, and is extremely tortuous. It measures  $4\frac{1}{2}$  inches in length. On laying it open the lumen is dilated, and contains a dirty blood-stained fluid; the mucous lining is swollen. The fimbriated end is entirely covered over by the ovary, to which it is adherent, and which forms a kind of cap over it. The Fallopian tube removed on the left side forms with the cystic ovary a tubo-ovarian abscess. The uterine end of the tube has a thickened wall, measuring  $\frac{1}{2}$  inch in diameter. The lumen is not much dilated, but pus exuded on pressure. The tube is tortuous between the uterine end and the fimbriated end, and measures  $\frac{3}{4}$  inch in diameter in this part. At the fimbriated end the tube



suddenly expands into a cyst-like body measuring  $3\frac{3}{4} \times 2 \times 2$  inches. The opening by which the two communicate is large enough to admit the tip of the finger. On examining the wall of the cyst-like portion it is found to contain corpora lutea, showing that the tumour is a tubo-ovarian abscess, and not a pyosalpinx. The contents were purulent.

The parts removed were submitted to a sub-committee of the Obstetrical Society of London, consisting of Mr. Bland Sutton, Dr. Roberts, and Dr. Tate, who made a report confirming the description of the tumour given above.

14th.—Since the operation patient has been much troubled with distension and frequent vomiting. An enema was given on the day after the operation without any result. On the following day an ounce of castor oil was given without result, after which a second enema was given with some result of flatus. Patient has a good deal of pain across the abdomen, and suffers much from flatulency. There is only a slight amount of vaginal discharge.

15th.—The bowels have been well opened, and there has been no more vomiting. She feels distinctly better.

18th.—Stitches were removed to-day. The wound is looking quite healthy.

20th.—On changing the dressing this morning at 4 a.m. the abdominal wound is seen to be gaping, and a piece of omentum is seen projecting up to the surface of the incision. The wound was strapped. At 10.30 a.m. Dr. Cullingworth saw the case, and found the omentum was adherent to the right side of the incision up to the layer of subcutaneous fat. This was separated, and three deep silk-worm-gut sutures were introduced without any anæsthetic. The wound was then dressed with iodoform gauze.

21st.—Patient complained of considerable pain in the abdomen last night. An enema was given with very good result, after which she felt much easier.

October 1st.—The stitches were taken out to-day, and the wound was found quite healed.

9th.—Patient's condition is quite satisfactory, but the appetite is capricious.

13th.—Patient was examined this morning. The sound



passes  $3\frac{1}{4}$  inches. The fibroid previously felt is much smaller. There is no exudation in the pelvis.

January 13th, 1897.—Patient presented herself at the hospital to-day. She has had no catamenial discharge since the operation. She complains of a little pain in the left side. Uterus is quite small. There is also no evidence of the presence of the fibroid.

SPECIAL TABLE III.—Abdominal Section for Conditions other than Diseases of Ovary and Fallopian Tube.

No.	Name.	Residence.	Civil condition.	Date of operation.	Nature of disease.	Nature of operation.	Glass drainage tube.	Periton. flushed.	Result.	Remarks.
1	A. K.	Dulwich	35 S.	1895 Dec. 5	Fibroid tumour of uterus, causing difficulty in micturition with partial retention of urine for 4 or 5 months	Oöphorectomy	No	No	R.	See "Abstract."
2	E. W.	Dulwich	40 M.	1896 Jan. 9	Pelvic peritonitis and pelvic cellulitis following confinement	Exploratory laparotomy	No	No	R.	A large mass of inflamed and adherent omentum was removed, but the uterine appendages were found free from disease. The uterus was enlarged and flaccid, entirely bound down by adhesions, and had all the characters of an inflamed ovarian cyst before the nature of the disease was determined by operation. On the 19th day after operation patient had a discharge of pus from the vagina which continued for a few days. After this patient made a good recovery.
3	M. G.	St. Albans	40 M.	Feb. 20	Fibroid tumour of the uterus, causing increasing menorrhagia for 4 years with pain and loss of flesh	Abdominal hysterectomy	No	No	R.	Patient suffered very severely from shock towards the end of the operation, and one hour after the operation 4 pints of saline solution were infused. Three days after the operation patient began to pass very large quantities of urine—113 ounces in 24 hours. It gradually increased to 209 ounces on March 1st. After this it averaged 130 to 150 ounces till May 1st, and then gradually diminished in quantity.

4	C. K.	Lambeth	36	M.	Feb. 24	Contracted pelvis complicating pregnancy		No	No	D.	In the first two pregnancies the child was delivered at term by craniotomy. In the third pregnancy labour was induced at the 7th month, but had to be completed by perforation of the after-coming head. The same treat- ment was necessary after induction of labour in the fourth pregnancy. For details of case see "Abstract."
5	M. E.	Bushy	39	M.	Mar. 13	Retro-peritoneal cyst		No	No	R.	Patient made a good recovery.
6	M. M.	Whimble, Exeter	38	S.	April 30	Subperitoneal fibroids of uterus, causing enlargement of abdomen and severe attacks of abdominal pain	One soft fibroid weighing 2 lbs. 6½ oz., and another hard fibroid weighing 1 lb. 15 oz. removed by the operation of myomectomy	No	No	R.	Patient was very collapsed after the operation, and had two bad attacks of vomiting during the night. After this she steadily improved, and had an uninterrupted recovery.
7	E. W.	West Kensington	35	M.	June 11	Abdominal tumour (? malignant)	Exploratory laparotomy	No	No	R.	After opening the abdomen the whole pelvis and lower part of the abdominal cavity was found to be occupied by a solid tumour, everywhere adherent, and apparently involving the intes- tines. It was found impossible to attempt its removal.
8	E. B.	Herne Hill	45	M.	July 2	Carcinoma of uterine body; dermoid cyst of both ovaries	Abdominal hysterectomy	No	No	D.	Patient was very collapsed after the operation, and seemed to have no rally- ing power. She died of shock 48 hours after the operation. At the autopsy the uterine stump was quite healthy; there was no sign of peritonitis.

No.	Name.	Residence.	Age.	Civil condition.	Date of operation.	Nature of disease.	Nature of operation.	Glass drainage tube.	Periton. flushed.	Result.	Remarks.
9	M. G.	Great Cheverell	36	W.	July 23	Fibro-myoma of cervix uteri, causing difficulty of micturition and occasional retention for 5 months	Oöphorectomy	No	No	R.	Patient made an uninterrupted recovery. On examination before leaving the hospital, 6 weeks after the operation, the tumour was found to have already diminished in size.
10	E. B.	West Hampstead	36	M.	Aug. 6	Fibro-myoma of uterus undergoing cystic degeneration	Abdominal hysterectomy	No	No	D.	Patient's condition was quite satisfactory during the first week. On the 7th day after operation temperature reached 101°. It varied then between 100° and 101°, but on the 11th day it rose to 102·4°. Patient suffered no pain, and the wound had quite healed. At the end of a fortnight the temperature fell to normal, but there was redness at the lower part of the wound. On the 18th day a little serous fluid exuded from the wound. The patient herself was feeling perfectly well, and was to have got up on the evening of the 19th day. At 1.25 p.m. on that day, however, while eating her dinner, she suddenly fell back dead. The autopsy showed a pocket of pus around the stump of the appendages of the right side. The cause of death was embolism of the pulmonary artery.
11	L. T.	Wandsworth	34	M.	Oct. 1	Inflammation around ligature of Fallopian tube applied during Cæsarean section	Enlarged glands dissected away; peritonæum opened and right ovary (which	No	No	R.	Patient made a good recovery.

12 L. R.	Balliam	56	S.	Oct. 15	3½ years ago; enlarged glands in inguinal canal	was inflamed and adherent to the mass of glands) removed	No	No	D.	Patient bore the operation well, but on the 18th Oct. was sick; this continued the next day, and was accompanied by diarrhoea. The diarrhoea continued till the 23rd, and greatly weakened the patient. There was no rise of temperature. On the 24th the hands and arms began to swell, and she had some want of control over rectum. This continued, and on the 28th the temperature began to rise, reaching 103° on the 29th. The patient then rather quickly lost ground, and died on the 31st Oct. At the autopsy the site of operation was quite healthy; there was thrombosis of the left axillary vein.
13 K. K.	Lambeth	30	M.	Oct. 22	Fibro-myoma of uterus	Abdominal hysterectomy	No	No	R.	Patient was in a very apathetic state for several weeks after the operation. Some superficial suppuration occurred about the wound after the stitches were removed, but by Dec. 4th the wound was completely healed. After this convalescence was uninterrupted. Patient made an uninterrupted recovery. Highest temperature after operation 100·2°.
14 E. W.	Queen's Park	37	S.	Nov. 12	Fibro-myoma of uterus	Abdominal hysterectomy	No	No	R.	The operation was extremely severe owing to considerable enucleation of the fibroid being necessary, and a larger amount of hæmorrhage than usual. Patient died of shock 15 hours after operation.
15 L. T.	Walworth	29	M.	Nov. 19	Fibro-myoma of uterus	Abdominal hysterectomy	No	No	D.	



No.	Name.	Residence.	Age.	Civil condition.	Date of operation.	Nature of disease.	Nature of operation.	Glass drainage tube.	Periton. flushed.	Result.	Remarks.
16	E. S.	Chapman	50	S.	Nov. 26	Sarcoma behind uterus of uncertain origin involving intestine; cystic degeneration; intra-cystic hæmorrhage	Exploratory laparotomy	No	No	D.	The tumour was removed, but was found to have involved intestines in its growth, and the latter was damaged during the separation of adhesions. The intestine was repaired by means of Murphy's button, the damaged portion of the gut being cut away. Patient died of shock before the completion of the operation.

CASE 1. *Fibro-myoma of uterus ; oöphorectomy ; persistence of symptoms of difficulty of micturition and irritability of bladder for some weeks after operation, followed by polyuria ; ultimate recovery* (from notes by B. Dyball and S. Turner). —A. K—, æt. 35, single, residing at Dulwich ; admitted 25th November, 1895, discharged 6th February, 1896.

Catamenia began at fifteen, twenty-eight day type, duration five days. For the last year the loss has been excessive, though the duration has not increased, and there has been pain just before and during the first two days of the flow. Four or five months ago patient noticed that she had to pass water more frequently than usual, and that she sometimes had great difficulty in starting the act. This trouble has increased, and for the last two months she has been passing only small quantities at a time every hour. She has had to pass water two or three times in the night. Six months ago she had an obstinate attack of constipation, and since then has had to take aperients fairly often. On examination of the chest after admission some slight signs of consolidation were found at the apex of the right lung. There is a soft systolic murmur at the apex of the heart, which, however, is not conducted outwards into the axilla. The abdomen is somewhat prominent over the lower part, and on palpation a hard mass can be felt in the hypogastrium, median in position, and rising out of the pelvis. Its upper and lateral margins are very clearly definable. The mass seems roughly oval in shape, and extends upwards for five and a half inches above the pubes ; it is very hard and nodular on surface, and pressure over it gives rise to pain. *Per vaginam* the cervix projects well into the vagina, and is lying low down very near the vaginal orifice. The cervical canal is patulous. Above the vaginal roof and behind the cervix is a nodular, hard, fixed mass depressing the vaginal roof, and extending to the left lateral wall of the pelvis ; this mass is continuous with that felt above the pubes on abdominal palpation. The bladder sound passes just over four inches to the right side, three and a half to the left, and one inch and three quarters in the middle line. The urine is acid, sp. gr. 1024 ; some albumen, no pus or sugar.

November 29th.—Patient has been more comfortable since she has been lying in bed, but she has had to pass water about every two hours.

*Abdominal section* (5th December).—Median incision between umbilicus and pubes. The peritoneum having been opened, two fingers were introduced to ascertain the position of the uterine appendages. The appendages on the right side were found lying rather behind the fibroid, which was found to completely occupy the pelvis, and reached upwards to within two fingers' breadth of the umbilicus. The left appendages were found deep down in the pelvis. A flat marine sponge was introduced to keep back the intestines, and the left appendages were brought sufficiently into view to allow the broad ligament to be transfixed below the level of the ovary, and ligatured in two portions. The appendages were then carefully cut away. The appendages of the right side were then secured in a similar way. The pelvis was then cleansed with a marine sponge, and the abdominal wound closed by five deep and three superficial sutures. The wound was then dressed with iodoform gauze.

The parts removed consist of the ovaries and parts of the Fallopian tubes. The right tube and ovary are normal, except for the presence of a small dermoid cyst measuring  $1 \times \frac{1}{2}$  inch, projecting from the surface of the latter. The ovary measures  $1\frac{1}{2} \times 1 \times \frac{1}{2}$  inch, and contains a well-developed corpus luteum. The length of tube removed is  $3\frac{1}{2}$  inches. The left tube removed measures  $2\frac{1}{2}$  inches. The left ovary measures  $1\frac{3}{4} \times 1\frac{1}{8} \times \frac{1}{2}$  inch. The line of section has passed through the ovary close to the ovarian ligament. Section of the ovary shows a normal appearance.

December 6th.—Shortly after the operation the pulse had fallen to 104, and was of good quality. This morning the condition of the patient seemed fair. She complained of a great deal of pain in the abdomen, and also was a good deal troubled with irritability of the bladder. She was a little sick twice, and had hardly any sleep. Since the operation the menstrual flow has returned in some quantity.

7th.—Very restless all night, hardly any sleep. There is some distension of the abdomen, but the walls are not

rigid, and there is no great tenderness. Patient was sick three times in the night. The temperature has not been above  $100.4^{\circ}$ , but the pulse is more rapid—120.

9th.—Patient looks worse this morning; her eyes are sunken and black-ringed, and her expression is anxious. She complains of great thirst, and her tongue is rather furred. An enema was given on the 7th with good result, and on the 8th one ounce of castor oil, followed by an enema, acted very satisfactorily. The abdominal distension has disappeared, but there is still a good deal of tenderness.

11th.—Patient had a disturbed night. An aperient was given last night, after which the bowels acted three times, giving rise to a good deal of pain. The menstrual discharge still continues.

12th.—There is a brawny condition of the wound to-day. The abdomen is very much distended, and is tympanitic all over. On vaginal examination it was found that the fibroid tumour was compressing the rectum. The menstrual flow, which has been extremely profuse, stopped this morning. Ever since the operation the bladder has been very irritable, patient passing her water every two hours or less.

13th.—Condition much the same, still very restless. Abdominal distension still considerable.

14th.—The urine yesterday was acid, contains a little albumen and a fair amount of pus. The bladder is now being washed out with boracic lotion. The stitches were removed this morning, and the wound presented a superficial granulating surface.

17th.—Bladder still very irritable. Urine contains a good deal of pus, and gives a heavy cloud of albumen on boiling. Temp.  $98.8^{\circ}$ . The bowels are now kept regular by daily enemata.

19th.—Patient slept a little better last night.

24th.—General condition much improved; gets up in the evenings.

30th.—Bladder is still a source of trouble. Patient is unable to pass water when she is up, and passes very little naturally. Catheter has to be passed twice daily, and each time a quantity of acid urine is drawn off.

January 2nd, 1896.—The fibroid tumour seems to have



increased in size since the operation ; it renders the abdomen below the umbilicus prominent. The upper border now is only just below the level of the umbilicus. It is very tender on pressure.

6th.—Patient's condition is about the same ; she is still unable to pass her water. During the last three days, however, a very large quantity of urine has been excreted,—92 ounces, 99 ounces, and 112 ounces respectively. Urine is very pale, sp. gr. 1008.

8th.—The tumour projects more forward through the anterior abdominal wall, and there is increased difficulty in passing the catheter. On the other hand, the rectal tube passes much more readily.

10th.—On abdominal examination the mass seems rather less prominent. It is also more moveable and less tender. The amount of urine passed is still excessive ; it contains some albumen and a little pus. The urine has still to be drawn off to a great extent by catheter.


17th.—Still further diminution in size of the tumour is obvious to-day. Patient is now able to pass a much larger quantity of urine naturally. Of the 84 ounces in the twenty-four hours, only 19 ounces were drawn off by catheter.

20th.—The quantity of urine passed in the day is still further diminishing. Patient passes nearly all her urine naturally now, but there are always two or three ounces of residual urine in the bladder after a natural evacuation. There is now no albumen or pus in the urine.

27th.—General condition very good. Catheter is only passed once a day, when the bladder is washed out. The tumour does not bulge into the anterior wall of the rectum as much as it did, but otherwise its position has not materially altered.

February 4th.—All bladder trouble has now practically ceased. Patient is going to a convalescent home on the 6th inst.

January 15th, 1897.—Patient presented herself at the hospital to-day, as she fancied she was getting larger, and also because she was still having her periods regularly. On examination the tumour was found to be still diminishing.





CASE 4. *Pregnancy associated with contracted pelvis ; delivery at term by Cæsarean section ; peritonitis ; death* (from notes by A. Montague).—C. K—, æt. 36, married, residing at Lambeth ; admitted February 19th, 1896, died March 3rd, 1896.

Patient was put out to nurse when an infant, but does not know how she was fed. She did not learn to walk till she was seven years old. She has always been strong, and has had no serious illnesses. Catamenia began at the age of fourteen, and have been regular, duration three days. She was married ten years ago. Three months after marriage had miscarriage at the tenth week. Eighteen months later she was confined at full term. Labour began at 6 p.m. in the evening, and on the following morning delivery was completed by means of craniotomy. Fifteen months after this, patient was again delivered of a full-term child by means of craniotomy. She was then instructed to come up to the hospital at the seventh month if she again became pregnant. In November, 1889, she accordingly presented herself, being then at the end of the seventh month of gestation. Labour was induced by means of a bougie, followed by a tent and Barnes's bags ; the breech was presenting, and the body of the child was delivered with some difficulty ; it was found necessary, however, to perforate the after-coming head before delivery could be completed.

In October, 1892, patient was again in the seventh month of pregnancy ; labour was induced in the maternity department, and again it became necessary to perforate the head before its delivery could be effected. Patient was regular again from this confinement till the 21st May, 1895, about which time she again became pregnant. It was decided that as she was unable to have a premature child delivered again, it would be best for this pregnancy to be allowed to go to the full term, and delivery then to be effected by Cæsarean section. She was therefore admitted on the 19th February, when she was near the end of the ninth month of gestation. On admission the heart is normal. Some rhonchi are present over the bases of both lungs. The breasts are full, tense, nodular, and somewhat tender. No rickety changes are noticed in the chest wall. The

abdominal swelling is most bulging in the left iliac and right lumbar regions. The head of the foetus is felt in the left iliac fossa; the back is directed towards the right, and the breech is towards the right side of the fundus. Foetal movements are readily felt. The foetal heart rate is 125. There is a well-marked antero-lateral curve of both tibiae.

Measurements :

Girth at level of umbilicus	.	.	.	36 inches.
Pubes to umbilicus	.	.	.	9 "
Umbilicus to ensiform cartilage	.	.	.	7 "
Rt. ant. sup. il. sp. to umbilicus	.	.	.	10 "
Left	"	"	"	9 "

*Per vaginam* the diagonal conjugate was found to measure  $3\frac{5}{8}$  inches. The promontory was not very pointed, and thus the measurements varied from  $3\frac{3}{8}$  to  $3\frac{7}{8}$ , but the first was the mean. The posterior portion of the pelvic brim was so readily reached that it seemed probable that there was general contraction as well as flattening. The placenta was found on palpation to the right of the middle line, and with its centre below the umbilicus. The urine is acid, sp. gr. 1034; contains no albumen or sugar, but a thick deposit of urates. Arrangements were made for Cæsarean section to be performed on the 24th February, irrespective of the onset of labour.

*Operation* (24th February, 2 p.m.).—The patient being anaesthetised with ether, an incision was made in middle line from a point one inch above the umbilicus downwards. The peritoneum having been opened, the uterus was found to be considerably rotated to the right, so that the anterior surface looked also to the right. This deviation of the uterus having been rectified, the uterus was maintained in position by pressure on either side of the abdomen, which also served to keep the organ in close contact with the abdominal wall. A vertical incision was now made in the uterus opposite the lower part of the abdominal wound; this incision was carried through the whole thickness of the uterine muscle. It was extended upwards and downwards, so as to measure  $4\frac{3}{4}$  inches in length. The membranes presented at the bottom of the wound in the uterine wall, and were punctured, and the amniotic fluid allowed to escape. The

head was then seized with the hand, and the child delivered. The umbilical cord was clamped and divided, after which the placenta was detached and removed. The uterus was now brought out through the abdominal wound, and covered with hot sponges. As it was not contracting well,  $\text{m\ddot{v}}$  of ergotin were injected subcutaneously. The hæmorrhage was partially checked by pressure of the vessels in the broad ligaments. Seven deep silk sutures were now inserted, entering through peritoneal surface half an inch from edge of wound and emerging just above the decidua. While these were being inserted there was a certain amount of hæmorrhage from the interior of the uterus, and one spurting vessel in the cut uterine wall was clamped. The hæmorrhage, however, was easily controlled, and was not at any time excessive. After the deep sutures were tied, a second series of half-deep sutures were put in outside the first. When these were tied they had the effect of entirely burying the original row of sutures, and bringing a considerable surface of peritoneum into apposition. The uterus now contracting well was replaced in the abdomen, and the patient was rendered sterile by ligaturing and removing the distal portions of the Fallopian tubes. The true obstetric conjugate was now taken by a graduated series of glass rods, and found to measure  $2\frac{9}{16}$  inches. The abdominal wound was then closed with ten silkworm-gut sutures, and a continuous catgut suture introduced to bring together the edges of the rectal aponeurosis. The placenta was of the marginate variety, and weighed 1 lb.  $2\frac{1}{2}$  oz. The child was a female, weighing 5 lbs. 7 oz.

February 25th.—Patient got over the operation without any great amount of shock. She has suffered from severe paroxysms of pain in the hypogastric region, for the relief of which hypodermic injection of morphia had to be given. The vaginal discharge is very slight and serous in character, suggesting the presence of a clot in the uterus. Patient had a cough before the operation, and this is now somewhat increased. Patient has taken a fair amount of milk and barley water. She has been unable to pass her urine naturally.

26th.—The pains were still severe yesterday, but got

better towards evening. The vaginal discharge is similar in amount, but darker. Patient passed water naturally yesterday, and has also passed flatus. Pulse 108 to 120.

27th.—Patient feels better, though her cough is still very troublesome. A simple enema was given this morning with very good result. Temperature this morning  $102\cdot4^{\circ}$ , pulse 124, and respirations 44. The lochia are scanty and quite free from offensive odour.

28th.—Patient only complains of pain in the abdomen on coughing. There is no tenderness on palpation. The temperature has varied from  $101^{\circ}$  last night to  $103^{\circ}$  this morning. The bowels were opened three times to-day after castor oil. A vaginal examination was made this morning, but the uterus and lochia appeared to be quite normal. An intra-uterine douche was given, but it returned quite clear.

29th.—This morning patient has a somewhat anxious expression. She had an acute attack of abdominal pain last night, and did not get any good sleep. There is now a good deal of tenderness in the lower part of abdomen on the left side, with impairment of resonance. A bead of pus was seen at the lower part of the wound, and the two lowest sutures were removed. Temp.  $104\cdot6^{\circ}$  last night,  $102\cdot2^{\circ}$  this morning. The patient is able to nurse her baby.

March 2nd.—Patient slept fairly well last night, and her expression is less anxious this morning. The stitches were all removed this morning. Patient has had continuous vomiting since last night. The vomit consists of a brown fluid. There is considerable distension of the abdomen. The temperature is low—varying from  $100^{\circ}$  to  $102\cdot2^{\circ}$ ; pulse 128, soft but regular. A simple enema is ordered, together with drachm doses of sulphate of magnesium every hour till the bowels act. The child can no longer obtain food from the breasts, the milk having nearly stopped.

3rd.—Patient's expression is very anxious, the cheeks are flushed and the eyes sunken. The pulse is very rapid and feeble. Vomiting was very frequent during the night up till 5 a.m. this morning. At noon yesterday during a fit of coughing patient felt something give way, and on removing the dressing it was found that the omentum was protruding



through the wound. The omentum was replaced and the wound firmly strapped. The vomiting continued very severe. At 4.30 p.m. Dr. Cullingworth saw the patient with Mr. Pitts regarding the abdominal distension. The wound was brought together by means of three silkworm-gut sutures. Feeding by the rectum was resorted to, but it was decided not to interfere further surgically. An enema was given early this morning, soon after which there was a large escape of offensive pus from the abdominal wound. After this the patient quickly passed into a condition of collapse, which terminated fatally at 5.30.

*Autopsy.*—The peritoneum is in a state of general inflammation, the coils of intestine being everywhere adherent together by flakes of lymph ; in some places small collections of pus are seen. The serosa itself is deeply injected, and its polish is gone. The uterus is 7 inches in length by  $4\frac{1}{8}$  across. The sutured uterine wall is quite sound, and is quite effective against a moderate water-pressure. The cavity of the uterus is quite empty, the placental site being visible on its posterior wall. The liver and spleen are healthy. The kidneys suggest early interstitial change. The lungs are œdematous at their bases, otherwise normal.





# STATISTICAL REPORT

OF

## THE OPHTHALMIC DEPARTMENT

### FOR THE YEAR 1896.

BY E. ARTHUR SAUNDERS, M.A., M.B., B.Ch.Oxon.,  
LATE OPHTHALMIC HOUSE SURGEON.

DURING the year there were 4392 new out-patients (exclusive of renewed letters), and 251 admissions relating to 216 in-patients; 260 major operations were performed. Total attendances in Out-patient Department 11,780.

#### *General Statement of Ophthalmic Patients.*

Number of beds in Ophthalmic Ward (including small ward)	...	...	25
Number of patients in ward, Jan. 1st, 1896	...	...	10
" " " Dec. 31st, 1896	...	...	18
" of discharges or deaths in 1896	...	...	243
	Male.	Female.	Total.
Discharged cured	84	75	159
" relieved	37	34	71
" unrelieved or for other causes	9	2	11
Died	1	1	2
	131	112	243

Average number of days in hospital—23·8.

(Infectious cases, of which there were five during the year, are treated in No. 8 block. These cases are included in this report.)

The two deaths were due, one to chronic interstitial nephritis, the other to marasmus.

*Table of In-patients.*

Catarrhal conjunctivitis . . . . .	2	Dislocation of lens . . . . .	2
Purulent conjunctivitis . . . . .	3	Hyalitis . . . . .	1
Trachoma . . . . .	1	Hæmorrhage into vitreous . . . . .	2
Conjunctival growth . . . . .	2	Shrunk globe . . . . .	3
Interstitial keratitis . . . . .	7	Intra-ocular growth . . . . .	3
Corneal ulcer . . . . .	25	Wound of globe . . . . .	20
Kerato-malacia . . . . .	2	Rupture of globe . . . . .	7
Corneal nebulæ . . . . .	2	Toxic amblyopia . . . . .	1
Staphyloma of cornea . . . . .	1	High myopia . . . . .	3
Episcleritis . . . . .	2	Strabismus, convergent . . . . .	5
Kerato-iritis . . . . .	1	"    divergent . . . . .	3
Iritis . . . . .	3	Ophthalmoplegia externa . . . . .	1
Irido-cyclitis . . . . .	1	Lachrymal abscess . . . . .	1
Cyst of iris . . . . .	1	Entropion . . . . .	4
Choroido-retinitis . . . . .	3	Ectropion . . . . .	4
Glaucoma, subacute . . . . .	1	Congenital ptosis . . . . .	2
"    chronic . . . . .	9	Wound of eyelid . . . . .	2
Optic atrophy after hæmatemesis . . . . .	1	Contracting socket . . . . .	1
Primary optic atrophy . . . . .	1	Growths in and about orbit . . . . .	5
Detachment of retina . . . . .	4	Cellulitis of orbit . . . . .	1
Cataract, lamellar . . . . .	12	Foreign body in orbit . . . . .	1
"    congenital . . . . .	3	Periostitis of frontal bone . . . . .	2
"    senile . . . . .	39	Frontal sinus empyema . . . . .	1
"    traumatic . . . . .	5		—
"    secondary . . . . .	2		216
Membrane after extraction . . . . .	8		

The following is a list of the chief operations performed :

Extraction of hard cataract . . . . .	32	Cautery to dermoid cyst remnant . . . . .	1
Operations for treatment of 24 soft cataracts . . . . .	32	Conjunctival suture over corneal wound . . . . .	
Extraction, as for hard, of traumatic . . . . .	1	Scouring of cornea . . . . .	
Extraction, as for hard, of secondary . . . . .	3	Paracentesis of anterior chamber	
Needling of congenital . . . . .	18	Removal of foreign body from cornea . . . . .	1
„ of traumatic . . . . .	2	Scleropuncture . . . . .	3
Curette evacuation of congenital . . . . .	6	Evisceration . . . . .	2
Curette evacuation of traumatic . . . . .	2	Excision . . . . .	43
Dissection of membrane after extraction of senile . . . . .	20	For injury . . . . .	28
Extraction of dislocated lens . . . . .	2	For disease . . . . .	15
Needling for myopia . . . . .	3	For ectropion . . . . .	2
Curette evacuation after needling for myopia . . . . .	3	For entropion . . . . .	5
Iridotomy . . . . .	1	For restoration of lid . . . . .	3
Iridectomy . . . . .	40	For uniting the lids . . . . .	1
For acute and subacute glaucoma . . . . .	1	For congenital ptosis . . . . .	1
For chronic glaucoma . . . . .	9	Tenotomy of internal rectus . . . . .	21
For secondary glaucoma . . . . .	1	„ of external rectus . . . . .	8
Preliminary to extraction . . . . .	12	Advancement of internal rectus . . . . .	2
For prolapsed iris . . . . .	12	„ of external rectus . . . . .	4
For artificial pupil . . . . .	3	Exploration of lachrymal abscess . . . . .	1
For cyst of iris . . . . .	1	For contracting socket . . . . .	1
For adherent leucoma . . . . .	1	For orbital cellulitis . . . . .	1
Division of anterior synechia . . . . .	4	Exploration and drainage of frontal sinus . . . . .	1
Cautery to conjunctiva . . . . .	1	Trephining of frontal sinus . . . . .	1
„ to cornea . . . . .	4	Removal of growths in and about orbit . . . . .	6
„ to corneal vessels . . . . .	3	Removal of foreign body from orbit . . . . .	2
			—
			260

TABLE I.—*Extractions of Hard Cataract.*—*Mr. Lawford's Cases (23).*

Page in bk. '96.	Report No.	Name and date.	Sex.	Age.	Anæsthetic.	Operation.	Progress of case.	Secondary operation.	Result.
8	1	M. H. Jan. 23rd	F.	57	Cocain	Left; extraction up with iridectomy; incision rather more peripheral than usual; conjunctival flap large. Iris fell over knife and a small portion was cut away; this removed, and then iridectomy performed; lens sticky, but removal fairly complete; vitreous presented, but did not escape; rather free bleeding. Patient behaved well	Satisfactory. Blood soon became absorbed; some striped keratitis; tension remained low for three weeks. Feb. 26th, 1897—Thin fluted membrane in pupil; will require needling; +10 D. = $\frac{3}{2}$ +	—	March 17th, 1896— +13 Ds. = $\frac{6}{18}$ . + 1 Dc. +18 Ds. = 6 J. + 1 Dc. words of 4 J.
30	2	W. O. Mar. 12th	M.	55	"	Left; extraction up with iridectomy; no conjunctival flap; lens very moveable and easily delivered. Some soft cortical substance removed subsequently	Wound leaked at first; tension remained low for 14 days; some striped keratitis. A delicate membrane finally left in which there is a narrow slit	June 4th, 1896— Cocain. Needling of left, one needle; good central gap made	June 8th, 1896— + 10 D. = $\frac{6}{18}$ . + 14 D. = 1 J.
34	3	S. P. Mar. 19th	F.	77	"	Left; extraction up with iridectomy; section good; conjunctival flap. Patient jerked her head when iris was seized, foriceps were withdrawn, and iris prolapsed. Iridectomy then made; rather free bleeding; lens soft, and came out reluctantly; a little cortex subsequently extruded	Favorable. Some striped keratitis below wound; a thin shining membrane left in pupil	Oct. 8th, 1896—Cocain. Needling of left, one needle; fair-sized triangular gap formed	Oct. 23rd, 1896— + 10 D. = $\frac{6}{18}$ . + 15 D. = 1 J. with difficulty.
35	4	M. A. T. Mar. 19th	F.	75	"	Left; extraction up without iridectomy; section almost exactly at sclero-corneal junction; no conjunctival flap; lens came away easily with much stretch-	Favorable. No prolapse of iris; posterior synchia laterally; fairly dense membrane left in pupil	—	June 5th, 1896— + 11 D. = $\frac{6}{18}$ . + 15 D. = 1 J.



13	5	P. C. Apr. 2nd	M. 43	"	ing, but no rupture of iris; pupil left nearly circular; a little cortical matter remained. Eserine after operation	Some flocculent lens matter left in pupil, which gradually became absorbed, leaving a fairly dense membrane	—	Dec. 1st, 1896— + 12 D. = $\frac{1}{15}$ . + 15 D. = 1 J.
38	6	J. M. Apr. 2nd	M. 64	"	Right; preliminary iridectomy, Feb. 6th, 1896. Extraction up; incision rather more peripheral than usual; lens came away easily. A small amount of soft cortex subsequently extruded	Favorable. Some striped keratitis; thin membrane left in pupil	—	May 15th, 1896— + 10 D. = $\frac{6}{15}$ . 5 L. + 14 D. = 1 J.
15	7	E. L. Apr. 16th	F. 73	Ether and chloroform	(Patient the subject of old iritis.) Right; preliminary iridectomy, Feb. 13th, 1896. Extraction down; small conjunctival flap; lens sticky and delivered with difficulty; no vitreous lost; no vomiting	Grey membrane left in pupil; tension remained continually low. Oct. 13th, 1896—Tension - 1 or more; eye quiet. No probability of further treatment being practicable	—	Eye quiet.
41	8	E. B. Apr. 16th	M. 70	Cocain	Right; extraction up with iridectomy; incision somewhat peripheral in temporal third; free bleeding from iris; cataract over-ripe, came out clean except for a small chip, which was subsequently extruded	Had gout in finger three days after operation. Blood in pupil rapidly absorbed; membrane in pupil of varying density; posterior synecchia at lower angles of coloboma pillars	—	Nov. 24th, 1896— + 12 D. = $\frac{6}{18}$ . + 15 D. = 4 J. slowly.
44	9	M. M. Apr. 30th	F. 64	"	Cf. No. 19. Right; extraction up with iridectomy; fair conjunctival flap; cataract rather soft, helped out with cystitome	Posterior synecchia at lower border of pupil; dense membrane left with almost clear vertical slit	Sept. 15th, 1896— Cocain. Needling of right, one needle; good gap made	May 7th, 1897— + 11 D. = $\frac{6}{15}$ . + 15 D. = 1 J.

Page in Bk. '96.	Report No.	Name and date.	Sex.	Age.	Augs- thetic.	Operation.	Progress of case.	Secondary operation.	Result.
48	10	S. R. Apr. 30th	F.	68	Cocain	Right; extraction up with iri- dectomy; dense nucleus came away easily	Fairly dense membrane finally left in pupil, to which inner pillar of coloboma is adherent	Nov. 26th, 1896—Cocain. Needling of right, one needle; good central gap made	Feb. 16th, 1897— + 10 D. = $\frac{6}{10}$ , 4 L. + 15 D. = 1 J. well.
105	11	H. B. May 11th	F.	57	"	(Patient the subject of old iritis.) Left; preliminary iridectomy down, Nov. 7th, 1895. Extrac- tion down; small conjunctival flap; lens moved freely under cystitome. Removal attempt d by hook passed behind lens, but lens substance too friable. Even- tually lens made to present by pressure, and delivered by sharp cystitome stuck into its substance. No loss of vitreous	Some striped keratitis; tension remained low for some four weeks. Remaining lens matter became gradually absorbed, leaving lower four fifths of pupil occupied by transparent bee's-wing-like membrane	Oct. 15th, 1896— Cocain. Needling of left chiefly to upper part of pupil, one needle; clear gap formed	Oct. 21st, 1896— + 15 D., counts fingers at 2 feet. Fundus found to be affected with choroido- retinitis; a few opacities in vitreous.
59	12	A. C. June 4th	F.	71	"	Left; preliminary iridectomy, Nov. 7th, 1895. Extraction up; incision close to sclero-corneal junction; fluid vitreous began to escape before incision com- pleted; unsuccessful attempt made to remove lens with scoop, and lens dropped back; sharp hook then introduced, and lens removed without much diffi- culty; a considerable quantity of rather thin clear vitreous lost	Two days after operation some sticky semi-purulent discharge took place from wound; cornea hazy; contents of anterior chamber turbid and yellowish; pus formed in anterior chamber and much leaking took place through the operation wound; eye collapsed	June 11th, 1896—Ether and chloro- form. Left; wound opened and enlarged; pus evacuated and some thickened edematous choroid pulled away; very little bleeding	After operation eye continued to discharge for some few weeks. Treated with Cl water. Eye remained shrunken.

29	13	F. P. June 4th	M. 60	"	Right; preliminary iridectomy, March 12th, 1896. Extraction up; incision close to sclero-corneal junction; small conjunctival flap; lens came out clean; was loose and moved under cystitome; no cortical matter could be removed subsequently; pupil left nearly black. Right; extraction up with iridectomy; incision at sclero-corneal junction. Patient moved eye during iridectomy, which was therefore somewhat ragged. Lens nucleus came away easily, leaving much soft cortex, some of which was subsequently extruded	Favorable. Thin membrane left in pupil, with clear vertical gap to nasal side	Sept. 10th, 1896— Cocain. Needling of right, one needle; good central gap	Sept. 19th, 1896— + 11 D. = $\frac{9}{9}$ , 7 letters. + 15 D. = 1 J. well.
63	14	A. S. June 18th	F. 65	"	Right; extraction up with iridectomy; incision fairly along sclero-corneal junction; small conjunctival flap. Lens moved freely under cystitome, and nasal margin became tilted forwards in front of iris. Sharp hook introduced, but failed to hold; lens removed easily by pressure; lens hard and brittle; no loss of vitreous	Posterior synecchia down and in. Pupil remained filled with a fairly dense membrane, in which were many local plaque-like thickenings	Oct. 1st, 1896— Cocain. Needling of right, one needle; membrane tough; two good gaps made, separated by a central strand	Oct. 6th, 1896— + 12 D. = $\frac{9}{12}$ . + 16 D. = 1 J. badly.
81	15	E. S. Aug. 20th	M. 60	"	Right; extraction up with iridectomy; incision fairly along sclero-corneal junction; small conjunctival flap. Lens moved freely under cystitome, and nasal margin became tilted forwards in front of iris. Sharp hook introduced, but failed to hold; lens removed easily by pressure; lens hard and brittle; no loss of vitreous	Some striped keratitis; ragged membrane left in pupil. (Patient is the subject of eczema)	—	Jan. 7th, 1897— + 12 D. = $\frac{9}{9}$ , 2 L. + 15 D. = 1 J.
94	16	C. R. Sept. 17th	M. 60	"	Left; extraction up with iridectomy. Patient moved, and iridectomy rather ragged. Lens delivered easily; hard nucleus and a good deal of soft cortex, some of which was subsequently removed	Wound gaped at first; some striped keratitis; posterior synecchia; pupil very irregular; brownish membrane in pupil, with a small irregular gap	—	Nov. 3rd, 1896— + 13 D. = $\frac{9}{9}$ . + 18 D. = 1 J.

Page in 96.	Report No.	Name and date.	Sex.	Age.	Anæsthetic.	Operation.	Progress of case.	Secondary operation.	Result.
96	17	H. B. Sept. 7th	F.	65	Cocain	Right; extraction up with iridectomy; lens fairly hard, and came out readily	Fine membrane left in pupil with small central gap; some posterior synechiæ	—	Jan. 27th, 1897— + 12 D. = $\frac{6}{9}$ . + 18 D. = 1 J. slowly.
97	18	E. K. Sept. 17th	F.	53	"	Right; extraction up with iridectomy; incision shorter than usual; conjunctival flap; lens harder than was expected, with some soft sticky cortex, part of which was afterwards extruded; pupil left fairly black	Favorable. Pupil blocked with dense grey membrane; will require needling	May 20th, 1897— Cocain. Needling of right, one needle; the membrane was torn away from the iris below; no gap in membrane	Unfinished.
44	19	M. M. Oct. 1st	F.	64	"	Cf. No. 9. Left; extraction up with iridectomy; good conjunctival flap; lens easily delivered, together with a fair amount of soft cortex; pupil left fairly clear	Wound gaped a little at first; posterior adhesion of angles of coloboma; thin fenestrated membrane occupies pupil	—	May 7th, 1897— + 11 D. = $\frac{6}{12}$ . + 15 D. = 1 J.
121	20	E. B. Nov. 5th	F.	60	"	Left; extraction up with iridectomy; iris prolapsed on making incision; lens came away easily, followed by a fair amount of soft cortex on subsequent pressure	Wound gaped a little at first; tension remained low for some three weeks; some posterior synechiæ; grey membrane in pupil	—	Feb. 9th, 1897— + 12 D. = $\frac{6}{18}$ . + 16 D. = 2 J.
6	21	A. P. Nov. 12th	F.	56	"	Right; preliminary iridectomy, Jan. 23rd, 1896. Extraction up; very little membrane left in pupil; wound gapes slightly	Patient the subject of glycosuria and chronic interstitial nephritis. Broad posterior synechia down and out; thin membrane in pupil with a vertical slit	—	Jan. 26th, 1897— + 13 Ds. = $\frac{6}{18}$ . + 1 Dc. + 18 Ds. = 6 J. + 1 Dc. words of 4 J.

125	22	A. B. Nov. 12th	F. 71	Right; extraction up with iridec- tomy. Iris bulged over knife, and was probably wounded on cut- ting upwards. Iridectomy then performed; considerable hæ- morrhage into anterior chamber, partly from iris, partly from primary incision; lens removed fairly easily	Favorable. Blood-clot soon ab- sorbed. At nasal end of colo- bona lies a small piece of iris apparently free; several poste- rior synechia	Feb. 4th, 1897— Cocain. Needling of right, one needle; good triangular gap formed	March 2nd, 1897— + 9 D. = $\frac{9}{18}$ , probably better. + 15 D. = 1 J. at 6".
136	23	J. N. Dec. 1st	F. 70	Right; extraction up with iri- dectomy; incision fairly peri- pheral; small conjunctival flap, chiefly at ends of incision; lens came away easily and fairly clean; a small quantity of soft cortex subsequently extruded; very little bleeding	A good deal of flocculent lens matter left, which gradually became absorbed. A week after operation there was a slight hæmorrhage from iris into the anterior chamber; a posterior synechia below	—	May 20th, 1897— + 9 D. = $\frac{9}{9}$ partly. + 13 D. = 1 J. well.

*Mr. Fisher's Cases (9).*

1	24	C. D. Jan. 29th	M. 58 Cocain	Right; extraction up with iridec- tomy; counter-puncture wide from sclero-corneal junction; no conjunctival flap; a wide gap in iris cut by knife as the incision was made up. Further iridectomy unnecessary. A quantity of soft cortex came away on pressure, followed by a firmer and less densely opaque nucleus; vitreous did not pre- sent; pupil left nearly black	Some striped keratitis; some opaque lens matter in pupil gradually became absorbed. On Feb. 5th patient struck his right eye; there was slight hæmorrhage from the reopened wound, and much striped kera- titis; blood slowly absorbed, and progress afterwards favor- able; some membrane in pupil with good vertical gap	—	Sept. 30th, 1896— + 10 Ds. = $\frac{10}{10}$ + 1 Dc. + 15 Ds. = 1 J. + 1 Dc.
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Page in Bk. '96.	Name and date.	Sex.	Age.	Anæsthetic.	Operation.	Progress of case.	Secondary operation.	Result.
41	F. V. Apr. 15th	M.	69	Cocain	Right; preliminary iridectomy, Jan. 15th, 1896. Extraction up; incision along sclero-corneal junction; large conjunctival flap, on making which there was rather free hemorrhage; cataract would not present on pressure, even after several attempts with cystitome to freely open capsule; corneal incision enlarged slightly outwards, and pressure again applied, when there was a sudden escape of vitreous; lens eventually removed with spoon	Some striped keratitis; eye remained congested and tension low for some three weeks; several posterior synechiæ; much opaque matter left in pupil, which gradually became absorbed, leaving a dense membrane. (Patient the subject of albuminuria and occasional glycosuria)	Sept. 25th— Cocain. Needling of right; one needle; gap somewhat small; membrane tough. Dec. 2nd— Cocain. Needling of right, one cutting needle; membrane very tough; gap slightly enlarged	Dec. 30th, 1896— Small gap in membrane. V. only fingers. Fundus change probably present, but details not visible.
55	M. D. May 13th	F.	79	"	Right; extraction up with iridectomy; incision somewhat short; rather free hemorrhage from iridectomy; lens on pressure presented, but would not escape; some extrusion of vitreous; lens withdrawn with hook; vitreous cut off, but conjunctival flap did not cover wound well; cataract large and hard; little or no soft cortex extruded	A little blood-stained lens matter in pupil; a fair amount of striped keratitis; many posterior synechiæ; inner pillar of coloboma adherent to scar	—	Oct. 26th, 1896— + 12 D. = $\frac{6}{18}$ , $\frac{6}{15}$ , 1 L. + 17 D. = 1 J. slowly.
1A	W. D. May 20th	M.	61	"	Right; preliminary iridectomy, Jan. 1st, 1896. Extraction up; incision along sclero-corneal junction; small conjunctival flap; cystitome freely used. On	Slight striped keratitis; some opaque lens matter in pupil. Six days after operation a hæmorrhage took place into anterior chamber, and eye remained	Sept. 23rd— Ether. Right excised	Dec. 1st, 1896— Artificial eye.

58	28	E. C. June 10th	F. 53	„	pressure only soft cortex came away, and then a small bead of vitreous presented; lens, which was hard and of fair size, then removed with hook	congested and tension low; lens matter became gradually absorbed, and eye became nearly quiet, but on Sept. 21st keratitis punctata was observed in left eye, which increased; excision of right was decided upon	—	Sept. 23rd, 1896— + 12 Ds. = $\frac{6}{12}$ partly. + 3 Dc. + 16 Ds. = 1 J. + 3 Dc.
63	29	W. B. July 1st	M. 70	„	Right; extraction up with iridectomy; good conjunctival flap. A small tag of iris left behind after iridectomy, and removed with iris forceps; lens easily delivered, followed by a small amount of soft cortex; pupil left nearly black	Slight striped keratitis; an adhesion of iris took place to remains of lens capsule below; pupil occupied by membrane, in which there is a vertical gap	—	Oct. 28th, 1896— + 10 Ds. = $\frac{6}{18}$ . + 2 Dc.
66	30	H. M. July 29th	M. 67	„	Right; extraction up with iridectomy; lens, somewhat brown in colour, expressed with difficulty; good conjunctival flap; wound gapes slightly	Some flocculent lens matter gradually became absorbed, leaving the pupil quite clear; no synchia	Patient very illiterate, Fundus perfectly seen.	Dec. 17th, 1896— + 10 D. = $\frac{6}{36}$ . + 15 D. = 12 J.
79	31	M. S. Sept. 28th	F. 62	„	Right; extraction up with iridectomy; good conjunctival flap; lens presented, but not readily delivered; edges of wound freed with repositors; lens now delivered with much soft cortex; pupil left nearly black	Some soft lens matter at lower part of pupil, which remained wide and circular; thick membranes finally left in pupil	made in lower part of pupil	May 31st, 1897— + 11 Ds. = $\frac{6}{6}$ fairly. + 2 Dc. + 15 Ds. = 1 J. + 2 Dc.

Page in Bk. '96.	Name and date.	Sex.	Age.	Anæsthetic.	Operation.	Progress of case.	Secondary operation.	Result.
86	E. L. Nov. 25th	F.	67	Cocain	Left; extraction up with iridectomy; incision somewhat short; lens, which was large and hard, presented, but could not be delivered by pressure; a drop of vitreous escaped on continuing pressure; a single attempt made to extract with hook, but this not successful; eye bandaged up. Dec. 5th—Chloroform. Left; incision in site of old incision; considerable hæmorrhage took place, both externally and into anterior chamber; spoon inserted behind lens, and lens easily delivered with very little loss of vitreous	Blood-clot in anterior chamber was soon absorbed. On Dec. 11th eye became painful, and yellowish inflammatory lymph was present in the anterior chamber; wound bulged slightly; a small hyphema was observed on Dec. 30th, and on Jan. 10th a further hæmorrhage into anterior chamber took place; no keratitis punctata in either eye. Feb. 5th—Iris drawn up; pupil blocked. Will require operation for artificial pupil	—	Unfinished.
50 (95 Bk.)	F. G. Jan. 17th	M.	11	Ether	Lamellar cataracts. (Right needed and evacuated in 1895. Left needed in Oct., 1895, and partially evacuated on Dec. 13th, 1895.) Left; second evacuation; section of cornea on outer side; lens matter extracted with some difficulty	Favorable	—	Feb. 20th, 1896— R. + 7 D. = $\frac{6}{1\frac{1}{2}}$ partly. + 11 D. = 1 J. L. + 7 D. = $\frac{6}{1\frac{1}{2}}$ partly. + 10 D. = 1 J. partly.
21	W. B. Mar. 5th	M.	9	"	Left; traumatic cataract. (Thorn removed from eye on Feb. 23rd, 1896.) Left; curette evacuation; section of cornea on outer side; some lens matter evacuated	Eye remained congested and tension low for some 5 weeks; posterior synechiæ below	—	Eye quiet.

TABLE II.—Soft Cataracts. Mr. Lawford's Cases (19).

4	35	A. M. Apr. 23rd	F. 21	Cocain	Old iritis; cataracts probably secondary in both eyes. (Left preliminary iridectomy up at Moorfields, July, 1894. Preliminary iridectomy down, Jan. 16th, 1896. Lens appeared to be dislocated downwards.) Left; extraction up; incision at corneal edge; iris touched with point of knife; membrane in pupil partly torn with cystiotome; capsule forceps introduced, but no membrane got away; a small quantity of lens matter extruded; no vitreous lost, but a bead presented in wound	Favorable. Some blood in anterior chamber after operation, which quickly became absorbed	—	Cannot count fingers, but sees hand movements at 2 to 3 feet. Before operation had perception of light only.
46	36	R. D. Apr. 28th	M. 27	"	Right; traumatic cataract; injury from a piece of metal. Right; extraction up without iridectomy; no conjunctival flap. On rupturing lens capsule with cystitome the lens matter immediately escaped into the anterior chamber, and was evacuated by external pressure; iris went back well; no foreign body in lens matter	Eye quieted down in 3 weeks and patient left hospital, but 3 weeks later returned, having had frequent attacks of pain, congestion, and lachrymation	June 12th, 1896—Ether. Right excised; a whitish patch of adherent lymph found behind ora serrata in the excised eye; this felt slightly gritty, but was not attracted by magnet; no other trace of foreign body	—
47	37	F. W. Apr. 30th	M. 27	"	Lamellar cataracts. (Had needling and curette evacuation of left in 1881.) Left needed, one needle; fair gap formed in upper part	Favorable.	—	May 4th, 1896— + 13 D. = $\frac{1}{3}$ . + 18 D. = 1 J. with diaphragm.

Page in Bk. '96.	Report No.	Name and date.	Sex.	Age.	Anes- thetic.	Operation.	Progress of case.	Secondary operation.	Result.
52	38	N. W. May 14th	F.	13	Cocain	Congenital cataracts. Right; first needling, two needles; fair central gap formed	Favorable	—	Aug. 24th, 1896— + 13 D. = letters of 19 J. Fundus well seen. No signs of disease.
55	39	E. W. May 28th	F.	9	"	Traumatic cataract; from needle prick. Right; lens matter stirred up with needle; a small flake of lens followed needle up to puncture in cornea, to which it remained adherent	Favorable	—	April 23rd, 1897— Pupil circular and active. Fundus easily seen. Some opaque capsule in lower part.
72	40	A. L. July 16th	M.	21	"	Traumatic cataract; injury from iron nail. (Right needled twice in 1892.) Right; membrane torn with two needles; a fairly good central gap made	Favorable	—	Aug. 17th, 1896— R. + 10 D. = $\frac{6}{8}$ , + 14 D. = 6 J. L. Has corneal nebula. + 1.5 D. = $\frac{6}{32}$ .
52	41	N. W. Aug. 25th	F.	13	"	Congenital cataracts (cf. <i>supra</i> , No. 38). (Left needled pre- viously, May 7th, 1896.) Left; second needling, one needle; good central gap formed	Favorable	—	Sept. 2nd, 1896— + 15 D. = letters of 19 J.
88	42	J. P. Sept. 4th	M.	9	Ether	Lamellar cataracts. (Had need- ling and suction evacuation of right in 1894.) Left; curette evacuation after needling on Sept. 3rd, followed by rise of tension. Incision near outer border of cornea; lens matter evacuated, most of the nucleus and some of the softer cortex; iris left free from wound	Favorable	—	Fundus well seen. No signs of disease. Favorable. (Child mentally deficient.)
82	43	N. B. Sept. 10th	M.	6	"	Lamellar cataracts. Right; cu- rette evacuation after needling on Aug. 27th. Incision near outer border of cornea, subse-	Favorable. Many posterior synechiae	—	April 3rd, 1897— + 10 D. = $\frac{6}{32}$ partly.



113	44	F. K. Oct. 22nd	F.	6	Cocain	quently enlarged; lens matter very sticky, and removed with difficulty; no prolapse of iris Congenital cataracts. (Right previously needled in 1892 and 1894.) Right; third needling, one needle; good clear gap left	Favorable	—	Nov. 18th, 1896— Satisfactory. Child does not know letters, but can evidently see well with her glasses, +18 D. Nov. 18th, 1896— Satisfactory. Cf. <i>supra</i> , No. 44.
113	45	F. K. Oct. 29th	F.	6	"	Congenital cataracts ( <i>cf. supra</i> , No. 44). (Left previously needled in 1892 and 1894.) Left; third needling, one needle; good clear gap left	Favorable	—	Nov. 18th, 1896— Satisfactory. Cf. <i>supra</i> , No. 44.
114	46	S. L. Nov. 5th	M.	14	"	Lamellar cataracts. Right; currette evacuation after needling on Oct. 22nd. Incision near outer border of cornea; lens matter sticky, and flowed out with difficulty; a small amount only removed	Favorable. Some posterior synechia	—	March 16th, 1897— +15 D. = $\frac{11}{16}$ partly. +20 D. = 1 J.
127	47	E. B. Nov. 12th	F.	18	"	Right; unilateral cataract (probably secondary to iritis). Extraction up without iridectomy; incision in periphery of cornea; lens capsule very tough; cystitis freely used; lens made to present with some difficulty, and being soft was evacuated only by degress and very incompletely	On day following operation iris was found to be adherent to, though not incarcerated in, corneal scar at nasal end; anterior portion of lens became absorbed; posterior portion remained opaque and became greenish. Tension remained low for some ten weeks; eye flushed on examination	Jan. 28th, 1897— Eye quiet, but flushes on examination. Right lens again freely Tension slightly lower than in left.	May 11th, 1897— Tension slightly lower than in left.
137	48	L. S. Dec. 3rd	F.	12	"	Lamellar cataracts. (Right needled three times in 1893, and once in 1894. Left needled four times in 1892.) Right; fifth needling, one needle; good central gap	Favorable	—	Dec. 10th, 1896— +13 D. = $\frac{11}{16}$ . +18 D. = 4 J. well, 2 J. badly.

Page in Bk. '96.	Report No.	Name and date.	Sex.	Age.	Anæsthetic.	Operation.	Progress of case.	Secondary operation.	Result.
108	49	W. R. Oct. 15th	M.	9	Ether	Congenital cataracts. (Left needled three times in 1893.) Left; fourth needling, one cutting needle; membrane very tough, and not cut through in lower part; tough portion separated fairly completely from rest of membrane, and brought over as far as possible to nasal side, leaving a gap external to it	Favorable	—	Oct. 27th, 1896— + 10 D. = $\frac{0}{36}$ .
108	50	W. R. Dec. 3rd	M.	9	Cocain	Congenital cataracts (cf. <i>supra</i> , No. 49). (Right needled on Oct. 29th and Nov. 5th, 1896.) Right; curette evacuation; incision in cornea down and out; a fair quantity of lens matter coaxed out by pressure; a little bleeding from iris	An adhesion formed between lens matter and corneal scar; some posterior synechiæ	—	Feb. 23rd, 1897— + 12 D. = $\frac{0}{27}$ .
138	51	C. H. Dec. 23rd	F.	68	Ether and chloroform	Left; secondary cataract. Irrectomy up for chronic glaucoma, from which cause right is blind; lens subsequently became opaque. Left; old incision reopened and enlarged at temporal end; lens capsule opened by cystitome; attempted removal of lens by pressure without result; lens partially removed by scoop; loss of a small quantity of vitreous and a good deal of thin aqueous-like fluid. Globe somewhat collapsed after operation	Wound gaped somewhat on Dec. 25th. On Dec. 27th had an attack of facial erysipelas, lasting about 14 days. On Dec. 28th a hæmorrhage took place into the anterior chamber, which became gradually very shallow, and on Jan. 2nd, 1897, appeared to be absent and remained so	May 13th, 1897— Cocain. Left; iridectomy downwards; a slight hæmorrhage took place from cut iris	May 25th, 1897— Counts fingers at two feet.

*Mr. Fisher's Cases (5).*

43	52	C. I. Jan. 27th	M.	9	Ether	Left; traumatic cataract. (Struck Eye by wooden dart on Jan. 21st.) tension very low, -2 or -3; Wound opened by repositior remains of lens yellowish and opaque; iris adherent to corneal scar	Feb. 3rd, 1897—Ether Left excised	Excision.
44	53	W. H. Feb. 5th	M.	15	Cocain	Lamellar cataracts. (Needling and curette evacuation of right in 1892; of left in 1893.) Right; second needling, one needle inserted and some of lens matter extracted; wound enlarged at either end; extruding portion of lens cut away; eye washed out	—	Feb. 14th, 1896— + 7 D. = $\frac{6}{15}$ partly, + 10 D. = 1 J.
129 (94 Bk.)	54	W. P. Feb. 10th	M.	15	"	Lamellar cataracts. (Right needled in 1894. Three needlings and curette evacuation in 1895.) Left; curette evacuation after needling on Feb. 5th; incision in cornea below; a considerable amount of lens matter escaped on withdrawal of keratome, and some more evacuated afterwards by curette	—	Unfinished.
53	55	J. I. Apr. 29th	F.	19	"	Lamellar cataracts. (Right needled in 1893. Left, two needlings and curette evacuation in 1895.) Right; second needling, one cutting needle; a fair gap made to nasal side of dense strand of membrane	Favorable	May 27th, 1896— + 11 D. = $\frac{6}{15}$ , $\frac{6}{9}$ 1 letter, + 16 D. = 1 J.
78	56	E. P. Sept. 15th	F.	19	"	Lamellar cataracts. (Right, needling and curette evacuation in 1889; needling in 1892. Left, needling and curette evacuation in 1890; needling in 1892.) Right; third needling, one needle; good gap down and in	—	Feb. 4th, 1897— + 10 D. = $\frac{6}{15}$ , 1 L. + 14 D. = 1 J.
						Favorable until Oct. 6th, 1895, when she says sight of right became misty; gap in membrane then still present; many posterior synechiae. V. + 10 D. = $\frac{6}{34}$	Feb. 4th, 1897—Cocain. Fourth needling of right, one needle; good square central gap formed	March 1st, 1897— + 10 D. = $\frac{6}{33}$ , 1 L. + 14 D. = 1 J.

*Analysis of Cataract Operations.*

I. Extraction of hard cataract—32 cases. Mr. Lawford, Nos. 1 to 23. Mr. Fisher, Nos. 24 to 32.

The section was made in all cases with a Graefe knife along the sclero-corneal junction, and was upwards in all but Nos. 7 and 9, who were the subjects of old iritis, and in whom extraction was performed downwards.

Iridectomy was performed in all cases with the exception of No. 4, in whom the lens of the opposite eye had been previously extracted without iridectomy. Eserine was instilled at the end of the operation, and the eye did well.

In Nos. 5, 7, 11, 12, 13, 21, 25, and 27 a preliminary iridectomy had been performed. In all cases atropine was used to the eye as a routine on the third morning after operation if the anterior chamber had become securely sealed.

In Nos. 1, 22, and 24 the iris was injured by the Graefe knife, in No. 24 a piece of the iris being cut completely away, so that further iridectomy was rendered unnecessary. In No. 3 the patient jerked her head when the iris was grasped, and the iris prolapsed on withdrawal of the forceps; and in No. 20 the iris prolapsed on making the corneal section. A successful iridectomy was subsequently performed in both cases.

In Nos. 2, 6, 11, 13, and 15 the lens moved under the cystitome, its nasal edge becoming tilted forwards in front of the iris in No. 15; and in No. 11, as well as in No. 9, in whom the lens was soft and sticky, the cystitome was used to extract the nucleus. In Nos. 12, 26, and 27 the lens was delivered by the sharp hook, and in Nos. 25 and 32 with the spoon. In No. 15 the lens was delivered by pressure after an attempt with the sharp hook had proved unsuccessful.

Vitreous escaped in Nos. 12, 25, 26, and 32, and presented without escaping in Nos. 1 and 27. In No. 12 the vitreous was thin and clear, and escaped on making the

corneal section. An attempt was made to extract with the spoon, but the lens dropped back, and was then extracted with the sharp hook at the first attempt. The operation was followed by suppurative panophthalmitis.

In No. 32 there was much difficulty in delivering the lens by pressure, and vitreous finally escaped. A single attempt was made to extract with the sharp hook, but this being unsuccessful the eye was bandaged up, and the patient sent back to bed. Ten days later the incision was reopened and the lens extracted with the spoon, only a slight further loss of vitreous taking place. Inflammatory lymph formed subsequently in the anterior chamber, but the eye finally quieted down, the iris being left updrawn.

Ether followed by chloroform was employed as a general anæsthetic in No. 7, one of the subjects of old iritis. In all the rest a freshly prepared sterile 2 per cent. solution of hydrochlorate of cocain was used, being dropped into the conjunctival sac previous to operation.

II. Operations for treatment of soft cataract—24 cases. Mr. Lawford, Nos. 33 to 51. Mr. Fisher, Nos. 52 to 56.

Extraction was performed in the same way as for hard cataract in Nos. 35, 36, 47, and 51, No. 36 being a traumatic cataract caused by a piece of metal, the others secondary cataracts. Of these, Nos. 35 and 47 followed iritis, and No. 51 an operation for iridectomy in an eye afflicted with chronic glaucoma. In No. 35 iridectomy had been previously performed both upwards and downwards, the extraction being performed upwards. Nos. 36 and 47 were extracted without iridectomy. In all these four cases the removal of the lens matter was more or less incomplete. In the case of No. 51 some of the lens matter was removed with the spoon, and here a small quantity of vitreous was also lost. A bead of vitreous presented also in No. 35, but none escaped.

There were eight curette evacuations, six being for congenital and two for traumatic cataracts. The incision was made with a keratome in the periphery of the cornea in all but No. 52, a traumatic cataract the evacuation of which was performed through the reopened corneal wound.



The remaining operations, twenty in number, were needlings, two being for traumatic and eighteen for congenital cataracts. Ether followed by chloroform was employed in the case of No. 51 as a general anæsthetic, and ether in Nos. 33, 34, 42, 43, 49, and 52, children whose self-control under operation could not be depended upon. In the remainder of the cases a fresh 2 per cent. solution of hydrochlorate of cocain was used locally.

R E P O R T  
OF THE  
DEPARTMENT FOR DISEASES OF THE SKIN,  
1896.

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By A. H. PAYAN DAWNAY, M.R.C.S., L.R.C.P.

TABLE I.—Statistical Table, 1896.

DISEASES.	Jan.		Feb.		Mar.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Totals.		Total.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
CLASS I.— <i>Hyperæmia</i> :																												
Erythema . . . . .	1	1	...	...	1	...	1	1	...	1	...	2	1	1	...	1	...	1	...	...	...	...	...	...	3	8	11	
CLASS II.— <i>Exudationes</i> :																												
Erythema nodosum . . . . .	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	
Urticaria . . . . .	1	2	1	1	3	...	3	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	9	9	18	
Eczema . . . . .	9	9	12	5	9	6	12	8	12	9	11	11	10	7	10	11	10	10	7	10	9	8	2	4	113	98	211	
Furunculosis . . . . .	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2	
Impetigo contagiosa . . . . .	...	...	...	...	...	...	...	...	5	...	1	2	2	...	1	...	4	...	2	2	1	2	1	2	17	8	25	
Herpes zoster . . . . .	...	...	1	1	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	4	2	6	
Psoriasis . . . . .	7	5	4	3	3	...	2	4	4	3	1	2	5	...	2	4	2	4	2	4	9	1	...	1	32	37	69	
Pemphigus . . . . .	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2	3	
Lichen planus . . . . .	...	...	...	...	1	...	...	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	3	3	
Dermatitis exfoliativa . . . . .	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	2	
" folliculorum . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	
" herpetiformis . . . . .	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	2	...	...	2	
" infective . . . . .	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	1	...	2	
CLASS III.— <i>Hæmorrhagiæ</i> :																												
CLASS IV.— <i>Hypertrophici</i> :																												
Verrucosis of face . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	
" of hands . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1	
Ichthyosis . . . . .	1	...	1	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	3	2	5	
Morphæa . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	
Verrucose patches on legs following psoriasis . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1	
Pityriasis rosea . . . . .	...	...	...	...	1	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	1	3	
CLASS V.— <i>Atrophici</i> :																												
Leucoderma . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	1	
CLASS VI.— <i>Neoplasmata</i> :																												
Lupus vulgaris . . . . .	1	...	...	...	...	...	...	1	...	...	1	...	...	...	2	...	...	...	...	2	...	1	...	...	4	4	8	



TABLE II.—*Age in certain Diseases.*

		Under 1 year.	1-5.	5-10.	10-20.	20-30.	30-40.	40-50.	50-60.	60-70.	70-80.	80-90.
Eczema	M.	10	9	6	20	22	10	6	10	15	9	—
	F.	2	11	7	15	11	17	11	10	8	1	1
	Total	12	20	13	35	33	27	17	20	23	10	1
Impetigo	M.	3	5	7	4	—	—	—	—	—	—	—
	F.	1	3	2	—	—	—	—	—	—	—	—
	Total	4	8	9	4	—	—	—	—	—	—	—
Psoriasis	M.	—	1	4	12	5	5	6	—	—	—	—
	F.	—	—	4	12	6	8	5	1	—	—	—
	Total	—	1	8	24	11	13	11	1	—	—	—
Alopecia areata	M.	—	—	7	16	4	2	1	—	—	—	—
	F.	—	—	5	13	2	1	—	1	1	—	—
	Total	—	—	12	29	6	3	1	1	1	—	—
Tinea tonsurans	M.	—	7	17	5	1	—	—	—	—	—	—
	F.	—	2	13	3	—	—	—	—	—	—	—
	Total	—	9	30	8	1	—	—	—	—	—	—
Tinea circinata	M.	—	—	1	1	2	1	—	—	—	—	—
	F.	—	—	2	4	—	—	—	—	—	—	—
	Total	—	—	3	5	2	1	—	—	—	—	—



STATISTICS

OF THE

THROAT DEPARTMENT OF ST. THOMAS'S  
HOSPITAL IN 1896.

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BY EWEN C. STABB, F.R.C.S.

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*Total Number of New Cases treated in the Special Department for Diseases of the Throat during the year 1896.*

	Number of patients.		
	Male.	Female.	Total.
A. Pharyngeal Affections . . .	462	410	872
B. Laryngeal Affections . . .	83	94	177
C. Affections of Nose and Accessory Cavities . . .	15	31	46
D. Buccal and Œsophageal Affections . . .	21	17	38
E. General and Miscellaneous Affections . . .	55	61	116
F. Renewed Letters . . .	64	74	138
Totals . . .	700	687	1387

*A. Pharyngeal Affections.*

Disease.	Number of patients.		
	Male.	Female.	Total.
1. Acute and subacute pharyngitis . . . . .	59	35	94
2. Chronic pharyngitis . . . . .	4	4	8
3. Granular pharyngitis . . . . .	18	9	27
4. Syphilitic ulceration and gummata . . . . .	11	15	26
5. Retro-pharyngeal abscess . . . . .	1	—	1
6. Mucous cyst of fauces . . . . .	1	—	1
7. Acute and subacute tonsillitis . . . . .	155	148	303
8. Chronic tonsillitis and hypertrophy of tonsils . . . . .	79	86	165
9. Peritonsillitis . . . . .	10	9	19
10. Peritonsillar abscess . . . . .	8	10	18
11. Adenoid vegetations . . . . .	38	37	75
12. Adenoid vegetations and hypertrophy of tonsils . . . . .	78	57	135
Totals . . . . .	462	410	872

*B. Laryngeal Affections.*

Disease.	Number of patients.		
	Male.	Female.	Total.
1. Acute and subacute laryngitis . . . . .	48	37	85
2. Chronic laryngitis . . . . .	18	16	34
3. Tuberculous laryngitis . . . . .	4	9	13
4. Lupus of larynx . . . . .	1	—	1
5. Syphilitic ulceration and gummata . . . . .	5	9	14
6. Dry catarrh . . . . .	—	2	2
7. Hæmatoma of larynx . . . . .	1	—	1
8. Perichondritis . . . . .	2	—	2
9. Œdema of larynx . . . . .	1	1	2
10. Myxoma of right vocal cord . . . . .	1	—	1
11. Spastic aphonia . . . . .	1	—	1
12. Functional aphonia . . . . .	—	18	18
13. Left abductor paralysis . . . . .	1	—	1
14. Dyspnœa ? cause . . . . .	—	1	1
15. Tracheal sinus . . . . .	—	1	1
Totals . . . . .	83	94	177

*c. Affections of Nose and Accessory Cavities.*

Disease.	Number of patients.		
	Male.	Female.	Total.
1. Acute and subacute rhinitis . . . . .	3	5	8
2. Hypertrophic rhinitis . . . . .	1	6	7
3. Naso-pharyngeal catarrh . . . . .	2	7	9
4. Epistaxis . . . . .	1	—	1
5. Ozaena . . . . .	2	3	5
6. Syphilitic ulceration and gummata . . . . .	—	2	2
7. Tuberculous destruction of septum . . . . .	1	—	1
8. Perforation of septum . . . . .	1	2	3
9. Deflected septum . . . . .	1	1	2
10. Mucous polypi . . . . .	2	4	6
11. Empyema of left antrum . . . . .	—	1	1
12. Eczema of nose . . . . .	1	—	1
Totals . . . . .	15	31	46

*d. Buccal and Esophageal Affections.*

Disease.	Number of patients.		
	Male.	Female.	Total.
1. Stomatitis . . . . .	9	7	16
2. Mucous tubercles of mouth . . . . .	2	1	3
3. Hypertrophy of lingual tonsil . . . . .	—	1	1
4. Elongated uvula . . . . .	1	—	1
5. Abscess of palate . . . . .	1	2	3
6. Syphilitic ulceration and gummata of soft palate . . . . .	1	2	3
7. Necrosis of hard palate . . . . .	1	—	1
8. Adenoma of soft palate . . . . .	—	1	1
9. Herpes of soft palate . . . . .	—	1	1
10. Diphtheritic paralysis of palate . . . . .	1	—	1
11. Epithelioma of tongue . . . . .	2	—	2
12. Epithelioma of tonsil . . . . .	1	—	1
13. Epithelioma of hard palate . . . . .	—	1	1
14. Leptothrix of tongue and fauces . . . . .	1	1	2
15. Malignant stricture of esophagus . . . . .	1	—	1
Totals . . . . .	21	17	38

## E. General and Miscellaneous Affections, &amp;c.

Disease.	Number of patients.		
	Male.	Female.	Total.
1. Diphtheria . . . . .	2	2	4
2. Scarlet fever . . . . .	1	—	1
3. Influenza . . . . .	—	2	2
4. Parotitis . . . . .	1	—	1
5. Syphilis . . . . .	8	9	17
6. Phthisis . . . . .	2	—	2
7. Bronchitis . . . . .	1	2	3
8. Pleurisy . . . . .	—	2	2
9. Simple bronchocele . . . . .	2	9	11
10. Exophthalmic goitre . . . . .	—	1	1
11. Chronic adenitis of neck . . . . .	8	3	11
12. Aural . . . . .	2	4	6
13. Ophthalmic . . . . .	—	2	2
14. Climacteric . . . . .	—	6	6
15. Medical . . . . .	17	6	23
16. Nil, debility, trivial, &c. . . . .	11	13	24
Totals . . . . .	55	61	116

*The following Operations were performed in the Out-patients' room under Chloroform or A.C.E. Mixture administered by Dr. Low.*

Disease.	Number of patients.		
	Male.	Female.	Total.
1. Removal of adenoids . . . . .	22	18	40
2. Removal of adenoids and tonsils . . . . .	56	44	100
3. For deflected nasal septum . . . . .	1	—	1
4. For abscess of external auditory meatus . . . . .	—	1	1
Totals . . . . .	79	63	142

REPORT  
OF THE  
ELECTRICAL DEPARTMENT  
FOR 1896.

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BY H. G. TURNEY, M.A., M.D.Oxon., M.R.C.P.,  
PHYSICIAN IN CHARGE OF THE DEPARTMENT.

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THE inauguration of the X ray department has certainly been the most important event of the past year; with this, however, Dr. Barry Blacker will himself deal on a subsequent page, and this renders any further mention of it unnecessary.

During the year fifteen cases of facial paralysis have been under treatment. Ten of these were the ordinary Bell's palsy, and have either already terminated in recovery, or show such signs of improvement as to make the final result certain. One patient presented that rare form of disease, complete double Bell's palsy. Double facial paralysis under any circumstances is anything but a common event, and as a result of rheumatic neuritis is of extreme rarity. In two cases facial paralysis was seen as a sequence of fractured base. In the first of these the patient was thrown from his cab and remained insensible for nine hours. There was hæmorrhage from the nose and from both ears; the paralysis of face developed two days later, and must have been due,



therefore, not, as might be expected, to rupture of the nerve, but to its compression by blood-clot, or possibly by inflammatory exudation. When seen a month later there was complete reaction of degeneration. Six months afterwards signs of recovery were found as regards the upper part of the face, but none as regards the lower.

The second patient also lost consciousness for a considerable time after the accident, had hæmorrhage from the left ear, and subsequently discharge of cerebro-spinal fluid. The paralysis of the left side of the face was noted a week later, and its existence can be positively excluded for several days after the accident. A fortnight later there was partial reaction of degeneration.

One case of facial paralysis was due to ear disease, and one to syphilis, the auditory being simultaneously affected.

Several examples of *pes cavus* have been under observation during the year. In not one of them could any evidence be found of its origin in paralysis of *interossei*, after the analogy of the *main en griffe*, but in more than one instance there seemed a good deal to support Parkin's view that it is an indirect consequence of shortening of the *tendo Achillis*. The notes of one case are as follows:—  
E. A—, æt. 14, complains of pain in walking, which, starting in the foot, extends up the leg. She is a fairly healthy-looking girl with the following history. Seven years ago she sustained an injury to the right thigh, which confined her to bed for six weeks; she says that for some years after this she was unable to get her foot to the ground, and in fact had not done so until within the last twelve months or so. On examination the left foot is found to be flat, the right to have the typical deformity of *pes cavus*; the four outer toes are in the extreme *interosseal* position,—in fact, dislocated on to the *dorsum*. The great toe is also *dorsiflexed*, but to a less degree. The nutrition of the foot and leg is very poor, the limb being cold and the skin blue and mottled. Reflexes are normal, or perhaps slightly over-brisk. With a view to improving the state of nutrition of the parts electric baths were ordered; the alternating main current applied through water. Eight months later the following note was made:—"The *pes cavus* has disappeared;

all the toes with the exception of the big toe are in the normal position; the big toe is still slightly dorsiflexed. The nutrition of the limb is now quite satisfactory; it is warm, the skin of normal colour. Patient can now walk perfectly well and without pain."

What share the treatment may have had in bringing about this result it would be rash to say; the case is quoted here because of the bearing it seems to have on the disputed origin of pes cavus.

In last year's report some mention was made of the subject of puerperal neuritis, which is treated at some length in another part of the present volume. During the past year one example of this affection was seen. The patient was a woman *æt.* 39, who had been delivered of twins six weeks before she came under observation. The second child had to be turned, otherwise there was nothing noteworthy about the confinement. A day or two before the patient had noticed a slight numbness and tingling in the right hand and arm. A few hours before delivery she noticed in addition some weakness in the limb, which has since then gradually increased until now it is almost useless. On examination no definite wasting can be detected; all movements of the hand are performed, but very weakly. There is partial anæsthesia of the tips and palmar surface of the fingers and thumb, the little finger alone being spared. The anæsthesia extends on to the palm, but only to its ulnar aspect. According to the patient's account there is also some slight affection of sensation over the dorsal surface of the hand and fingers, but this is not sufficiently marked for objective demonstration. The electrical reactions in the muscles of the affected area are perfectly normal.

The weak point about the case is the paucity of physical signs; beyond the patient's account of her sensations there is little to suggest disease. At the same time the account is so clear, and the serious disability entailed by the complaint is so undoubted, that it is hardly possible to ascribe the symptoms to a neurosis, of the existence of which there is no other indication.

Isolated division of the posterior interosseous nerve is an uncommon occurrence; in the following case the accident

had almost the character of a physiological experiment. The patient is a girl of seventeen, who a week previous had been stabbed in the forearm with a penknife. Since then she has had loss of power limited to the long extensors of the fingers, which supervened immediately after the injury. On examination there is a small incised wound one inch in length on the outer surface of the left forearm, about two inches below the flexure of the elbow over the posterior part of the belly of the supinator longus. The wound shows no signs of inflammation, and is almost healed. The long extensors of the fingers and thumb are completely powerless, while those of the wrist act perfectly. Sensation is quite unaffected. Electrical examination shows in the affected muscles loss of irritability to the faradic current, and some diminution of irritability to the voltaic. The diminution of voltaic irritability is unaccompanied by any serial change. The patient was admitted to the hospital and the nerve sutured with satisfactory results.

The following case is one of considerable interest. The patient is a married woman thirty-three years of age. In the beginning of July of this year (1896) she was ill for a month with constant sickness and some headache, but otherwise suffered no pain. At the end of the month she developed pains in all her limbs, and within a few hours was unable to move the left lower limb. The pains, although general, had been specially referred to the left thigh, *i. e.* the paralysed side. At the same time control was lost, though very temporarily, over the bladder, the rectum throughout remaining unaffected. From a letter recently received from the medical man in attendance at the time it appears that the paralysis was both sudden and complete; so much so, indeed, that at first the affection was supposed to be hysterical. The premonitory symptoms, on which a good deal of stress was laid by the patient, do not seem to have been very striking from the medical point of view, for the letter in question states that the paralytic trouble came without warning. The patient came under observation on November 5th, *i. e.* three months after the onset of symptoms. The results of the examination then made are as follows:—The patient is a healthy-looking, well-nourished woman, suffering from almost complete para-

lysis of the left lower extremity. She is quite unable to walk without assistance. The left thigh is markedly wasted, and the muscles are very flabby. Between the two thighs there is a difference of  $1\frac{1}{2}$  inches in the circumferential measurement taken 4 inches above the upper border of the patella. The limb, both thigh and leg, is much colder than its fellow on the opposite side. Flexion of the thigh is very weak, and is performed by the ileo-psoas and sartorius. Extension of the thigh is also very slight; the glutei act well, the hamstrings very slightly if at all. In the leg the paralysis is practically complete, the calf muscles alone retaining a slight degree of power. The left knee-jerk is absent, the right present and normal in extent. Plantar reflex obtained on both sides equally. There is no affection of sensation whatever, and from the patient's account there never has been, with the exception of the pain noticed at the onset.

*Electrical reactions—faradic.*—Nothing but the very strongest current produces any response from either nerves or muscles in the whole limb, excepting only the sartorius, which reacts readily. Of the others, the calf muscles give the readiest contraction, though this is of the feeblest. To the galvanic current irritability is also much diminished, and the contraction obtained is very sluggish. There is no serial change. KCC. occurs at 10 ma. Electro-sensibility seems to be diminished. Neither nerves nor muscles are tender. Since then there has been some improvement, but the change is very slight, and progress is very tedious. It may be mentioned that there is nothing in the previous history to throw any light on the cause of the malady; neither alcohol nor syphilis can be detected. Nor can any explanation be found in the surroundings of the patient. What is the diagnosis? The lesion can hardly be in the peripheral nerves; the localisation to one limb, and the inclusion of all the nerves in that limb, in the absence of any indications of pressure on the plexus in the pelvis, point strongly to either nerve-roots or spinal cord. The suddenness of onset and the non-involvement of the sensory tract decidedly favour this view. In supposing the lesion to be inside the spinal canal but outside the spinal cord fresh difficulties arise; the acuteness of



onset and the diffused pains of the first few hours suggest a hæmorrhage, but the subsequent progress of the case makes this unlikely. The destruction of one or two motor roots in this way with a merely transient irritation of the rest is hard to conceive. The hypothesis of either a hæmorrhage into or an acute hæmorrhagic inflammation of the spinal cord meets with the fewest difficulties. Of the two the former is the more probable. An acute anterior polio-myelitis in an adult is distinctly uncommon, and the limitation of such an inflammation to the whole of one limb, as was the case here, is still more unusual. A small hæmorrhage, on the other hand, may quite readily be limited to one or two groups of cells, and, as is well recognised, always tends to affect the grey matter of the cord rather than the white. Some explanation, however, must be found for the symptoms which preceded the onset of the paralysis by some weeks. To what exact pathological cause these were due it is now impossible to say for certain, but we may suppose them to have been the expression of some infective disorder, such as influenza. Such an infection would account either for a hæmorrhage into, or an acute inflammation of the grey matter.

Cases of functional disease were much less numerous this year than last, and presented few points of interest. In one the symptoms took the form of spasm of the interossei. The patient, a girl aged thirteen, complained of stiffness of all the fingers of both hands for some weeks past. She was certainly a rheumatic subject, but no heat, tenderness, or swelling of any of her joints could be detected at the time. On both sides the position of the fingers was one of extreme flexion at the metacarpo-phalangeal, and extension at the two interphalangeal joints. Any attempt at extending the one joint or flexing the other two was resisted with cries of pain. There was no wasting or other abnormality, and no affection of sensation. The general health appeared to be good. Recovery was complete in three weeks; salicylate of soda was given internally on account of the rheumatic history. It would not be just to consider this case as one of pure neurosis in the face of the undoubted rheumatic taint. The symmetrical affection of all the phalangeal articulations on both



sides without any perceptible change in the joints puts out of court any rheumatic arthritis in the ordinary sense of the word, but the rheumatic poison has a powerful influence on the nerves or nerve-cells, and probably acted at least as *agent provocateur* with regard to the production of these curious symptoms.

In another case there was a somewhat similar difficulty in diagnosis. The patient was a man of thirty, a sign-writer by trade; he had had lead colic, but no more serious signs of poisoning. He had no blue line on the gums, and no indications of a serious cachexia. By his own account he had always been of an excessively nervous temperament, and for the last seven or eight months had been suffering from tremors of the body and limbs, with numbness down the left side of the body. As he talked he shivered and shook from head to foot, the tremors increasing remarkably under observation. But while a tremulous leg was being examined the arms and head ceased to move, and *vice versâ*. Apart from this the movements occurred quite arbitrarily, sometimes during rest, sometimes on exertion. There was no rigidity and no alteration in reflexes. The only affection of sensation consisted in a complete hemianalgesia which existed on the left side, and extended exactly up to the middle line of the body. The man attended only once, and it is therefore impossible to say anything about the subsequent progress of the malady.

If it had not been for the clear history of exposure to lead, and, moreover, of actual susceptibility to it, the condition would have been diagnosed without any doubt as a pure neurosis. And even recognising the toxic factor, the balance of probability seems to be strongly in favour of that view; but as against this it must be remembered that saturnine encephalopathy not very rarely begins with what appear to be hysterical symptoms. Hysterical hemianalgesia is a rare condition in a man of thirty; the symptoms had come on very insidiously, and there was certainly nothing in the patient's demeanour (apart from the exaggeration of the tremor under observation) which suggested neurosis. In neurotic subjects any toxic agent may produce the typical symptom-complex of hysteria; in uræmia, for example, pseudo-hysterical symptoms are far from uncommon, and in

mercurial poisoning (the closest analogy possible to lead) the same stimulation occurs. On the whole the diagnosis of hysteria may be accepted, but with a certain amount of doubt.

Among the occupation neuroses were cases of writer's and sempstress's cramp. These patients are nearly always unsatisfactory ; as a rule, they attend once or twice and are seen no more, and as the main interest of the disease lies in the treatment they are on this account hardly worth mentioning. In one case, that of a man of thirty, the form taken was unusual ; the spasm was localised in the muscles which adduct the upper arm to the trunk. As a result of this the first word or two of a line was written fairly well, while the rest gradually tailed off in a parabolic curve. Three months later there was no improvement.

REPORT  
OF THE  
EAR DEPARTMENT  
FOR THE YEAR 1896.

---

By RICHARD LAKE, F.R.C.S.

---

DURING the year 1896, 670<sup>1</sup> new cases presented themselves for treatment. As in previous years, no case has been inserted under more than one heading; but for various reasons it has seemed better to group together the classes of "Adenoids" and "Eustachian obstruction," though doubtless there are many cases included under these two heads which might be equally placed under Chronic median otitis.

There were also 158 operations performed in the out-patient rooms during the year.

<sup>1</sup> Of these cases 661 were aural and 9 nasal diseases.

	Males.	Females.	Total.
<b>A. DISEASES OF EXTERNAL EAR.</b>			
Cerumen . . . . .	23	21	44
Eczema . . . . .	11	12	23
Hæmatoma . . . . .	1	0	1
Abscess of meatus . . . . .	1	2	3
Foreign bodies . . . . .	0	2	2 <sup>1</sup>
Total . . . . .	36	37	73
<b>B. DISEASES OF MIDDLE EAR.</b>			
Rupture of membrana tympani . . . . .	1	1	2
Acute median otitis:			
(a) Without perforation . . . . .	9	3	12
(b) With perforation . . . . .	12	9	21
Chronic median otitis . . . . .	28	31	59
Do. with suppuration . . . . .	186	135	321
Otalgia . . . . .	0	3	3
Cicatricial membrana tympani . . . . .	6	5	11
Senile changes in membrane . . . . .	1	1	2
Eustachian obstruction . . . . .	} 64	74	138
Adenoids . . . . .			
Mastoiditis . . . . .		7	9 <sup>2</sup>
Total . . . . .	308	268	576
<b>C. DISEASES OF INTERNAL EAR.</b>			
Syphilis . . . . .	1	0	1
Degeneration of eighth nerve . . . . .	2	2	4
Nerve tinnitus . . . . .	1	3	4
Labyrinthine disease . . . . .	0	1	1
Deaf-mutism (acquired) . . . . .	0	2	2
Total . . . . .	4	8	12
Grand total . . . . .	...	...	661

<sup>1</sup> One bead and one jet ornament.<sup>2</sup> The operations performed appear in the general surgical report.

During the previous four years 1661 cases of suppurative otitis media presented themselves in the Ear Department for treatment, out of which number 27 were operated on for mastoid abscess, or a proportion of 1 in 62·518, exclusive of cases admitted from the casualty or other departments of the hospital.

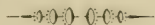
*Table of Operations.*

	Males.	Females.	Total.
Aural polypus . . . . .	13	10	23
Adenoids, &c. . . . .	67	65	132
Paracentesis . . . . .	1	0	1
Operation for foreign body . . . . .	1	0	1
Displaced septum nasi . . . . .	1	0	1
Total . . . . .	83	75	158



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# St. Thomas's Hospital MEDICAL SCHOOL



## CALENDAR AND PROSPECTUS

FOR THE  
YEAR COMMENCING OCTOBER 1ST, 1897.



1897 & 1898.

LONDON :

PRINTED BY W. P. GRIFFITH & SONS, LIMITED,  
*PRUJEAN SQUARE, OLD BAILEY, E.C.*



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# THE ST. THOMAS'S HOSPITAL AMALGAMATED CLUBS.

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The several Students' Clubs were amalgamated in July, 1888, and are maintained by the subscriptions of the Members, and by a yearly grant from the Medical and Surgical Officers and Lecturers.

The Amalgamated Clubs comprise the Students' Club, the Medical and Physical Society, the St. Thomas's Hospital Gazette, and the following Clubs :—Athletic, Chess, Cricket, Cross Country, Football (Rugby and Association), Lawn Tennis, Rifle, Rowing, and Swimming.

All Students are strongly advised to join the Amalgamated Clubs when they enter the Medical School. They are then able to spend the whole day at the School, all meals being obtainable at a moderate tariff, and they are further provided with facilities for exercise and recreation.

New Club premises adjoining the Medical School were opened in June, 1894. They contain a Dining Room (51 ft. × 39 ft.) and a Smoking and Reading Room (distinct from the School Library), 51 ft. × 29 ft., supplied with Daily and Illustrated Weekly Papers, and a Gymnasium. A Cloak Room with Lockers, and a Lavatory with Bath Rooms, are in the old building.

A ground of more than nine acres in extent has been acquired for the Amalgamated Clubs. It is situated at Chiswick, and can be reached in 40 minutes from the Hospital, the fare being 7d. for a return ticket. It is admirably adapted for Football, Cricket, Lawn Tennis, and Athletic Sports. It is provided with a Pavilion where Refreshments can be obtained, and all Members have the use of it subject to the Rules of the various Clubs.

The Annual Subscription to the Amalgamated Clubs is Two Guineas. After the payment of five consecutive subscriptions the Student becomes a Life Member.

Life Membership may be compounded for in the first year by payment of Seven Guineas ; in other years, by payment of Six Guineas.

Subscriptions or Composition Fees may be paid to the Medical Secretary, Mr. G. RENDLE, or the Librarian, Mr. G. S. SAUNDERS.

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## MEDICAL SCHOOL.

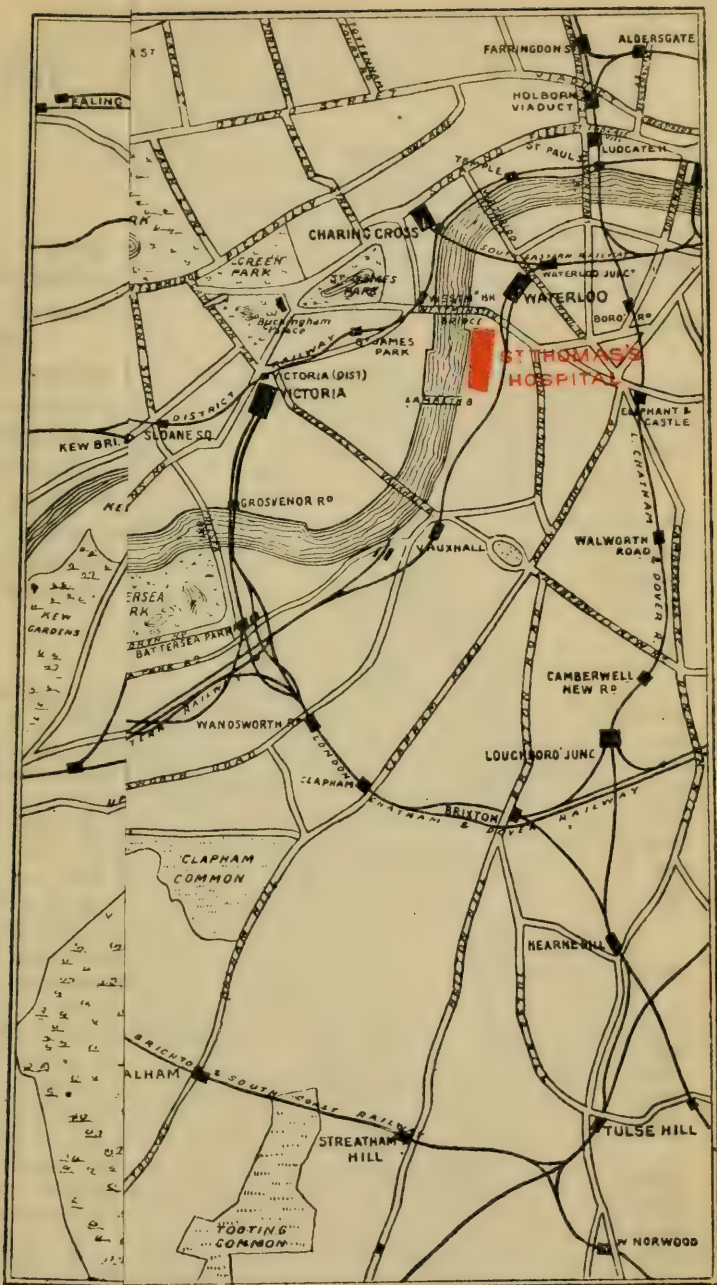
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A Register of LODGINGS suitable for Students has been recently revised, and is kept in the Secretary's Office. Information as to terms, accommodation, &c., can be obtained on application. This Register has been especially prepared with a view to the convenience of new Students for whose accommodation in lodgings or otherwise no definite arrangements have been made.

Medical Practitioners, Clergymen, and Private Families residing in the neighbourhood receive Students for residence and supervision.

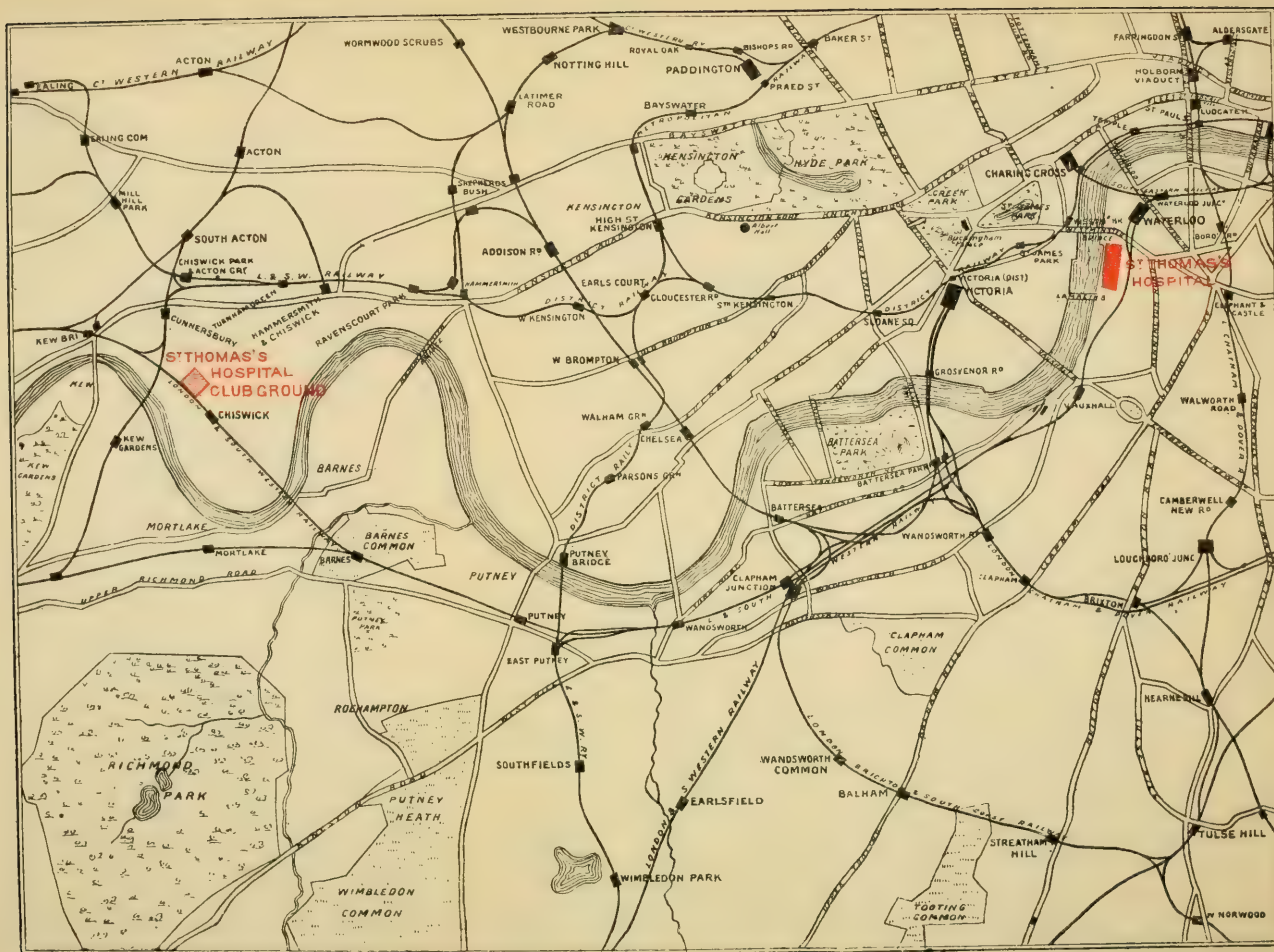
For information on all matters relating to the Medical School, Prizes, Scholarships, &c., application should be made to the Medical Secretary, Mr. G. RENDLE, at the Hospital, Albert Embankment, S.E., personally (10 to 4, Saturday, 10 to 1) or by letter.





To face p. 4.]

W. P. GRIFFITH & SONS, LTD., PRUJEAN SQUARE, OLD BAILEY, E.C.



# St. Thomas's Hospital

## MEDICAL SCHOOL.

The WINTER SESSION 1897-98 will commence on October 2nd, and terminate on March 31st.

The SUMMER SESSION will begin on May 2nd, and terminate on July 30th.

The Prizes will be distributed in the Governors' Hall, on SATURDAY, October 2nd, at 3 P.M. During the afternoon the various Departments of the Hospital and School will be open for the inspection of Visitors.

Refreshments will be provided in the Library.

The Annual Dinner, in which all former and present Students are invited to join, will take place the same evening at the Whitehall Rooms, Hotel Métropole, at 6 for 6.30 o'clock, Sir William MacCormac, Bart., President of the Royal College of Surgeons of England, in the Chair.

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THE first Hospital of St. Thomas, within the precinct of the Priory of St. Mary Overie, being destroyed by fire in the year 1207, the prior and convent erected in the same year near the site of their house a temporary hospital. This building was in the emergency used for religious purposes; mass was said there until the priory was rebuilt. In 1228 Peter de Rupibus, Bishop of Winchester, built the Hospital of St. Mary or St. Thomas, Overie, on the opposite or eastern side of the highway, on land provided by Amicius, Archdeacon of Surrey, and dedicated it to St. Thomas the Martyr.

The following is a translation of the "charter" of 1228:—

"The Lord Peter's charter of indulgence for twenty days granted by him for this hospital.

"Peter, by the grace of God Bishop of Winchester, to all the faithful in Christ in the diocese of Winchester, greeting. In Him who is the salvation of the faithful. As saith the Apostle, bodily discipline which consists in fasts, vigils, and other mortifications of the flesh, profiteth little, while piety availeth for all things, having the promise of the life which now is, and of that which is to come.

"Our Lord Jesus Christ among the works of piety enumerates, commends, and teaches us to fulfil six, as though more praiseworthy and more meritorious than the rest, saying, 'I was an hungred, and ye gave Me to eat; I was thirsty, and ye gave Me to drink; I was a stranger, and ye took Me in; I was naked, and ye clothed Me; I was sick, and ye visited Me; in prison, and ye came to Me.' To them that



perform these works of piety He shall grant His blessing and the glory of His heavenly kingdom, saying, 'Come, ye blessed of My Father, receive the kingdom which has been prepared for you from the beginning of the world.' But to them that neglect and do not perform works of compassion He threatens His curse and the penalty of eternal fire, saying, 'Go, ye cursed, into eternal fire, which has been prepared for the devil and his angels.' It is therefore to be borne in mind, my dearest sons, and more deeply laid to heart, how needful and how conducive to the salvation of our souls it is to exercise more readily those works of piety whereby blessing is promised to us, and the felicity of eternal life is gained.

"Behold at Southwark an ancient hospital, built of old, to entertain the poor, has been entirely reduced to cinders and ashes by a lamentable fire. Moreover, the place wherein the old hospital had been founded was less suitable, less appropriate for entertainment and habitation, both by reason of the straitness of the place, and by reason of the lack of water and of many other conveniences: according to the advice of us, and of wise men, it is transferred and transplanted to another more commodious site, where the air is more pure and calm, and the supply of waters more plentiful. But whereas this building of the new hospital calls for many and manifold outlays, and cannot be crowned with its due consummation without the aid of the faithful, we request, advise, and earnestly exhort you all, and with a view to the remission of your sins enjoin you, according to your abilities, from the goods bestowed on you by God, to stretch forth the hand of pity to the building of this new hospital, and out of your feelings of charity to receive the messengers of the same hospital coming to you for the needs of the poor to be therein entertained, that for these and other works of piety you shall do, you may, after the course of this life, reap the reward of eternal felicity from Him who is the Recompenser of all good deeds, and the loving and compassionate God. Now we, by the mercy of God, and trusting in the merits of the glorious Virgin Mary, and the Apostles Peter and Paul, and St. Thomas the Martyr, and St. Swithin, to all the believers in Christ, who shall look with the eye of piety on the gifts of their alms—that is to say, having confessed, contrite in heart and truly penitent, we remit to such twenty days of the penance enjoined on them, and grant it to them to share in the prayers and benefactions made in the church of Winchester, and other churches erected by the grace of the Lord in the diocese of Winchester. Ever in the Lord; Farewell."

The Bishop of Winchester or the Archbishop seems to have granted, in 1277, to the Brethren power to elect their own Master; in a visitation, 1323, they are ordered to follow the rule of St. Augustine—the rule of the parent house—in obedience, chastity, renunciation of individual property, and the Master to eat with the Brethren.

In 1417 the Master and Brethren formed a Court of themselves, and exercised authority within the precincts of the Hospital over persons regular or secular, and in cases civil or even criminal.

The hospital, built in 1228, had by 1507 become dilapidated and insufficient; great efforts were then made to rebuild and enlarge it.

In the Duchy of Lancaster records there is "the Rentall of Thomas Becketts hospitall in Southwarke, of all the lands and tenements belonging to the hospitall." It contains the names of the tenants and the rents paid; it is without date, but from internal evidence must be early in the sixteenth century.

Within the precincts of the hospital was the renowned printing press of James Nycolson, who, in 1527, signed the contract for the painted windows of King's College, Cambridge, as "James Nycolson, of St. Thomas's Spytell in Southwark." The most remarkable issue from this press was the first English Bible printed in England, inscribed thus—"Imprynted in Southwarke in St. Thomas Hospitale by James Nycolson. Dedicated by M. Coverdale to the King 1537."

About this time there were a Master, Brethren, and three Lay Sisters; forty beds were made up for poor, infirm, and impotent people, who were supplied with victuals and firing.

In the year 1535, Henry VIII. was excommunicated by Pope Paul III., and, declaring himself head of the church, proceeded to dissolve the Catholic houses, whose large revenues went to the Crown. There seem to have been 645 monasteries and abbeys thus treated, twenty-eight of which had abbots with seats in Parliament, ninety colleges and free chapels, and 110 hospitals of various descriptions. It is certainly in favour of the sweeping change that so able and honest a man as Sir Richard Gresham, the Lord Mayor of London, should have put his hand to the following petition to the King:

"Most redowted, puyasant, and noble Prince \* \* \* \*—here and within the cytie of London be iij hospitalls or spytells commonly called Seynt Georges Spytell, Seynt Barthilmews Spytell, and Seynt Thomas Spytell, and the new Abbey of Tower Hill, founded of good devotion by auncient fathers, and endowed with great possessions and rents only for the reliefe, comferte, and helping of the poore and impotent people lying in every street, offending every clene person passing by the way with theyre fylthy and nasty savors. Wherefore may it please your merciful goodness, enclyned to pytie and compassion, for the reliefe of Xts very images, created to his own similitude, to order by your high authoritie, as supreme head of this Church of England, or otherwise by your sage discretion, that your mayer of your cytie of London, and his brethren the aldermen for the time being, shall and may from henceforth have the order, disposition, rule and governaunce both of all the lands, tenements, and revenues apperteynyng and belongyn to the said hospitals, governors of them, and of the ministers which be or shall be withyn any of them, and then your grace shall facillie perceyve that where now a small number of Chanons, Priests, and Monkes be founde for theyr own profit only, and not for the common utilitie of the realme, a great number of poore, needy, syke and indugent persones shall be refreshed, maynteyned, and comforted: and also healed and cured of their infermities frankly and freely by physicions, surgeons and potycaries, which shall have stipende and salarie only for that purpose; so that all impotent persones not able to labour shall be releved, and all sturdy beggars not willing to labour shall be punished."



St. Thomas's Hospital being claimed by the King as Church property, was surrendered to him by Thomas Thirleby, the then master, on the 15th July, 1538. It was called St. Thomas à Becket's Spittil. Its yearly revenue was estimated at £266 17s. 6d., and an annual pension of 5s. 8d. was payable by the master, and another of 2s. 1d. by the curate, to the Archdeacon of Surrey. Soon after the seizure, we find that the citizens of London purchased of the Crown some of its landed estates, producing about £160 yearly. The want of the hospital thus destroyed was felt immediately. Wounded soldiers from the army in France, and the sick poor in general were without provision or help, and Henry proposed granting to the city the Mansion house of St. Bartholomew's, the dissolved house of Grey Friars adjoining, and the unoccupied fabric of St. Thomas's Hospital. The latter was intended by Henry to receive the name of the Hospital of the Holy Trinity, and to be allotted exclusively to lame, wounded, and diseased soldiers. The monastery of Grey Friars was to be for the education and maintenance of fatherless children and those of poor parents. The intentions of Henry were overtaken by death, but not before he had conferred upon the citizens of London the Hospital of St. Bartholomew's and also that of Bethlem for lunatics.

It is from the death of Henry that the connection of St. Thomas's Hospital with the City of London appears to begin. To meet the needs of the sick and destitute who had before depended on the charity of the religious houses, a Committee or Board of Inquiry was instituted by the citizens, with the sanction of King Edward. About 2,100 souls were reported as fit recipients of relief, as fatherless children and invalids, or as "Idle rogues of both sexes who were levying contributions on public sympathy by feigned tales of sorrow." It was proposed to establish receptacles for each class in the unoccupied monastic buildings, and a pecuniary contribution was set on foot to complete the work. They bought the dissolved house of the Franciscans or Grey Friars near St. Bartholomew's Hospital, and also by charter from the King received a grant as follows: "That the said mayor, commonalty, and citizens, and their successors, may have and enjoy all the franchises, immunities, and privileges whatever, which any Archbishop of Canterbury, and which the said Charles late Duke of Suffolk, or any master, brethren, or sisters of the late Hospital of St. Thomas in Southwark aforesaid; or any Abbot of the said monastery of St. Saviour, Saint Mary Bermondsey, next Southwark aforesaid, or any prior and convent of the priory of St. Mary Overie, ever had or enjoyed, or which we hold or enjoy, or our most dear father Henry the VIIIth, late King of England, or had enjoyed, or ought to have, hold, and enjoy the same: and that none of our heirs or successors may intermeddle with this our grant."

The Grey Friars became Christ's Hospital, and the Southwark site the Hospital of the Holy Trinity or St. Thomas's. The Lord Mayor and certain citizens then met on the 6th of October, 1552, and constituted themselves by royal permission governors of the hospitals, and almoners of the money collected. The Hospital of the Holy

Trinity they named in compliment to Edward, the "King's Hospital," and ordained it to receive 260 "wounded soldiers, blind, maimed, sick, and helpless objects."

They also directed that 380 children should be received into Christ's Hospital.

To complete the scheme, the old palace of Bridewell, in Blackfriars, where the Emperor Charles V. had lodged in 1522, when on a visit to Henry VIII., and where subsequently Wolsey had lived, was granted to the City by Edward as a house of correction for dissolute persons and idle apprentices, and for the temporary maintenance of distressed vagrants.

Lastly, the lands lately belonging to the Palace of the Savoy were conferred jointly on the three foundations; and a month only before the end of Edward's short reign, he incorporated by a second charter bearing date the 6th of June, 1553, the Lord Mayor and commonalty of the City of London in succession as perpetual governors of Saint Bartholomew's, Christ's, Bridewell, and the King's Hospital (which last received the name of ST. THOMAS THE APOSTLE), and secured to them the possession of all the estates and revenues appertaining to them by previous deeds of gift. So were the royal hospitals founded.

In 1557 the laws were framed and printed under the name of "The Order of the Hospitalls of K. Henry the VIII. and K. Edward the VI., viz., St. Bartholomew's, Christ's, Bridewell, St. Thomas's. By the Maior, Cominaltie, and Citizens of London," &c.

Successive bequests and donations continued to augment the property of the charities, but during the reigns of Elizabeth, James I., Charles I., and the Protectorate, there appear few facts to note. In the abstract of the charter of confirmation granted to the City in 1663 by Charles II. on his restoration, we find the charter of Edward acknowledged and confirmed. The Great Fire of London in 1666 injured St. Thomas's in its revenues only; and a fire in Southwark anno 1676 ceased, "as if by divine interposition," at the hospital, probably a strong and isolated block of building. Shortly after this, however, it was found necessary to rebuild the fabric, and in 1693 subscriptions were opened for this purpose. A long list of benefactions in this and the succeeding year, amounting in all to £37,769 3s., is given by Golding, who especially singles out Sir Robert Clayton for eulogium. The statue then erected to him, and still extant, was originally dated 1701, but this was altered on his death to 1714. He was the founder of the old square in which it stood, replacing what Golding terms "a low swampy structure of the monastic order." In 1707, Mr. Guy, founder of the neighbouring hospital, erected three wards at his own charge. In 1717, the back block of buildings adjoining Guy's Hospital was added. With the exception of the two large blocks forming the Borough frontage, the north wing erected in 1833, and the south wing in 1839, the fabric seems to have remained unchanged until its purchase by the railway. In the centre of the front quadrangle stood the brass statue of King Edward, by Scheemakers, erected first in 1737, in pursuance of the will of Charles

Joye, some time treasurer of the hospital. It now stands in the grounds of the New Hospital.

It is a matter of more difficulty to trace the early history of the medical school in connection with the hospital. For the facts which follow we are indebted to the late R. G. Whitfield, Esq., who, from the long period during which his family had been associated with this foundation, was perhaps more qualified to speak than any other person.

The earliest mention in the hospital books of an apprentice is on December 31st, 1561. It is not until 1702 that a law is met with precluding pupils or surgeons from dissecting the dead body without permission from the treasurer.

In 1703 the grand committee resolved that no surgeon should have more than three "Cubbs," a term altered in 1758 to that of "Dressers." Besides these there were also apprentices to the surgeons of the hospital, and ordinary pupils. The first mention of lectures occurs soon after the appointment of Wm. Cheselden, in 1718. These he at first gave at his own house, but afterwards by permission in the hospital. They were on anatomy and surgery. In 1723 a regular registry was ordered to be kept by the apothecary, of pupils entering to surgical practice. In 1725, Guy's Hospital was opened for the reception of patients. In 1751 the assistant-physician was allowed to take two pupils for his own benefit. In 1768 an additional surgeon, Mr. Joseph Else, was elected to read lectures to the pupils.

The students of Guy's Hospital had by courtesy been allowed to attend the operations, and a similar favour admitted the St. Thomas's men to those at Guy's. But on the 8th November, 1768, it was formally resolved that the pupils of each hospital have the liberty of attending not only the operations, but surgical practice, and the money to be divided between the six surgeons and two apothecaries. Hence the appellation of the "United Hospital"; an amalgamation never extended beyond the surgical practice.

To Mr. Else is due the foundation of a regular anatomical school. Mr. Cline, who in 1781 was appointed to read lectures conjointly with Mr. Else, was mainly instrumental in bringing it to its greatest celebrity. At Mr. Else's death, Mr. Cline purchased the collection of preparations made by him and Mr. Girle, a former surgeon, which are now in the hospital museum, and became sole lecturer on anatomy. In 1788 he also became surgeon to the hospital. Mr., afterwards Sir Astley, Cooper was apprenticed to Mr. Cline in 1784, and before his election, as one of the surgeons to Guy's Hospital in 1800, was joint lecturer with his teacher on anatomy and surgery. They both added materially to the pathological museum.

In 1812 Mr. Henry Cline was elected surgeon to St Thomas's Hospital on his father's resignation, and carried on the anatomical lectures conjointly with Astley Cooper. In 1813 a new anatomical theatre and museum were built, the hospital giving £3000 for the purpose, and the two lecturers £1000 each. In 1815 Mr. Benj. Travers, an apprentice of Astley Cooper's at Guy's, was elected surgeon, according to the established rule which gave the vacancy



to the senior apprentice of either institution. Mr. Travers joined in the lectures, devoting his attention specially to ophthalmic surgery. In 1820 Mr. Joseph Henry Green was elected surgeon, on the death of his cousin Mr. Hy. Cline, having been apprenticed to his uncle Mr. Cline in the year 1809. From 1820 to 1825 he lectured with Astley Cooper. At this period all the branches of medical study,—viz., medicine, chemistry, *materia medica*, midwifery, botany and physiology—were lectured on at Guy's Hospital, and no physician of St. Thomas's was allowed to share them.

In 1824 Sir A. Cooper resigned the surgical chair, and Mr. C. Aston Key, his apprentice and nephew by marriage, joined Mr. Green in the office. Mr. Frederick Tyrrell, standing in exactly the same relation to Cooper, received permission to lecture on diseases of the eye. In the following year Cooper showed signs of cerebral disturbance, and the family desired that his nephew, Mr. Bransby Cooper, should be his successor. But the claims of Mr. John Flint South were considered superior, and he was appointed. From this cause the "United Hospitals" were severed, and a complete school set up in both. The majority of the students clung to Guy's, where the prestige of the great Sir Astley was still strong; and St. Thomas's school began to sink. The establishment of the Aldersgate Street private school under Tyrrell and Lawrence materially aided in this declension, as did also the secession of Dr. Elliotson to the newly-established University College, and the foundation of a fresh school at King's College, where for a time the surgical lectures were given by Mr. Joseph Henry Green, although a surgeon of St. Thomas's.

Owing to the unprosperous state of affairs in 1842, the Governors came forward to reorganize the school, and the aid of Mr. R. D. Grainger, whose popularity had been established in the Webb Street private school, was obtained. Mr. Joseph H. Green also rejoined the school; and Dr. Marshall Hall, Dr. Hodgkin, Dr. Martin Barry, Dr. Gregory, and Mr. Benjamin Travers contributed to its efficiency. In 1847 the Governors added to the School a lectureship on general pathology in connection with the hospital practice, and appointed to that lectureship and the associated clinical duties Mr. John Simon, whom afterwards (1853) they made one of the surgeons. In 1855 they added a lectureship on public health, and appointed to it Dr. Headlam Greenhow, who afterwards became physician to the Middlesex Hospital. This state of affairs continued until 1858, when the Governors gave back the management, and its attendant risks, into the hands of the lecturers.

For some years it was maintained with difficulty, and much self-sacrifice on the part of the staff, during what may be termed a transitional period, in the hope, now realized, of its once more developing into an institution worthy of its old traditional glories.

From its foundation down to the year 1862, the hospital occupied the original site near London Bridge, but in that year the property was sold for the extension of the railway accommodation, and the establishment temporarily removed to the Surrey Gardens, where

it was carried on till the summer of 1871. In 1868 the first stone of the New Hospital at Westminster Bridge was laid by the Queen, and the completed building was opened by her Majesty in 1871. In September the patients were first admitted into the New Hospital, and the Medical School was opened on October the 2nd.

## NIGHTINGALE NURSING SCHOOL.

The Committee of the "NIGHTINGALE FUND" have arrangements with the authorities of St. Thomas's for educating Women in the practice of Hospital Nursing. On the satisfactory completion of one year's probationary training, they will be required to enter into service as Nurses in St. Thomas's or some other Hospital or Infirmary. A limited number of gentlewomen can be admitted under special agreements to this course of training, with a view to qualify themselves for superior appointments, or as District Nurses.

The Regulations as to the admission of Candidates may be obtained by writing to Miss L. M. Gordon, the Matron, St. Thomas's Hospital, London, S.E., to whom also application should be made by Institutions requiring trained Superintendents or Nurses.

Candidates should, whenever it is possible, make personal application to Miss Gordon, at the Matron's Office, at 10.30 a.m., on Tuesday or Friday.

The Nightingale Fund is the proceed of a public subscription raised at the close of the Crimean War, as a tribute to Florence Nightingale, for the services rendered by her in tending the sick and wounded soldiers in the Military Hospitals on the Bosphorus and at Balaklava. It was, by her request, vested in Trustees to enable her to establish an Institution for the training, sustenance, and protection of Nurses and Hospital attendants, and, as invested, produces an income of £1400. The Fund is managed by a Council, appointed by her. The School was opened at old St. Thomas's in 1860 with 12 probationers, increased to 45 at the present time. 1318 candidates have been admitted and 793 trained Nurses have received appointments; many of these are now Matrons or Superintendents of Nurses.

The Secretary to the Council is Mr. Henry Bonham-Carter, 5 Hyde Park Square, W.

## THE HOSPITAL.

The original Hospital latterly contained 500 beds. The present building contains in all 572 beds. It consists of six blocks appropriated to the reception of patients; with one for the administrative and other offices, and one for the Medical School. The Ward blocks, though connected by corridors, stand apart, so as to afford free exposure in all directions. The Wards, with the exception of four which are placed on the ground floor, occupy the first, second, and third floors. Generally, each Ward affords accommodation for 28 beds, which are placed against the piers between the windows, so as to secure thorough ventilation. In a small Ward annexed to each larger Ward, there are two beds for cases requiring special care or treatment.

The operating theatres are unusually large, and have been lately thoroughly refitted, refloored, and provided with electric lighting. They are now peculiarly well adapted for the carrying out of aseptic surgery.



A laboratory has been recently erected on the east side of the Hospital, provided with every facility for bacteriological, microscopical, and chemical examination into the condition of the patients in the Wards. The investigations carried on in the laboratory by the Superintendent and his Assistants comprise all those methods of examination which from their difficulty and complexity cannot be carried out at the bedside, and they have in view the completion of the Hospital record of each patient.

Of the whole accommodation of the Hospital, about 210 beds are appropriated to Medical cases, and 270 to Surgical cases. There are special Wards for the reception of diseases peculiar to women (21 beds); for diseases of the eye (25 beds); and for children under six years of age (30 beds). In one of the blocks, separated from the rest of the establishment, there are Wards for infectious diseases.

The space provided for each bed in the ordinary Wards is upwards of 1,800 cubic feet, and in the block appropriated to infectious diseases, about 2,500 cubic feet.

The Department for Out-Patients has been recently re-arranged, and it is now perfectly adapted both for the management and treatment of patients and for the teaching of Students. There have been added two large rooms, well ventilated, well lighted, provided with ample sitting accommodation, so arranged that large numbers of Students are able to follow and grasp the method of examination and the basis of treatment employed by the Assistant-Physician and Assistant-Surgeon.

There is also a series of rooms devoted to the special departments, and a room set apart and fitted up for Physical Exercises.

A very complete department for the systematic use of the Röntgen Ray photography has been fitted up at considerable expense, and has proved to be of great value as an aid to diagnosis.

During the twelve months ending December 31st, 1896, the number of patients admitted into the Hospital amounted to 6,011. In the same period, 20,232 Out-patients have been treated, and in the Maternity department 2,477 women have been attended at their own homes. Casualties, to the number of 99,178 attendances, were treated during the same period.

## THE MEDICAL SCHOOL.

The School buildings isolated, by a large quadrangle from the Hospital, stand at its southern extremity, between the river and the gardens of Lambeth Palace. They are very commodious, and every effort has been made to provide accommodation completely fulfilling modern requirements.

In the year 1885 the Anatomical Department was much enlarged and remodeled. In 1892 considerable alterations were carried out in the Physiological Department, giving increased space in the Laboratory and providing facilities for lectures and lantern demonstrations. In 1893-4 further extensive alterations were made. Two new wings were added to the main building, containing a large laboratory for the classes in Elementary Biology and Pathology, private working rooms for the teachers in those departments, a dissecting room for the Biology class, improved accommodation for the Operative Surgery class, and a large class room for the classes in Practical Surgery. At the same time the collection of Physical Apparatus was removed to a laboratory *en suite* with the Chemical Department.

New premises were also provided for the Students' Club, to which a Gymnasium has been added, and the arrangements are now such as to render it quite unnecessary for Students to leave the School buildings during the working hours of the day. Electric Lighting has been introduced into the new departments and part of the older building.

The plan inserted between pages 14 and 15 shows the changes in detail, both on the ground and first floors.

## THE MUSEUM OF HUMAN AND COMPARATIVE ANATOMY AND PATHOLOGY.

*Curator.*—S. G. SHATTOCK, ESQ., F.R.C.S.

The Museum, which is of ample size and well lighted, has two galleries devoted entirely to the display of specimens illustrating Pathology: the different series are each preceded by a normal preparation of the organ to which they refer.

On the ground floor are the collections of Normal Human, and of Comparative Anatomy; there is, moreover, a series of type specimens of Pathology, selected to facilitate the study of this subject.

THE COLLECTION OF HUMAN ANATOMY contains a large number of dissected Preparations, illustrating the Organs of Locomotion and Sense; the Nervous System; the Digestive, Respiratory, and Urinary Apparatus; the Vascular System and Organs of Reproduction; and, in addition, a series of elaborate dissections. A new Catalogue of this collection has been drawn up by Mr. Shattock.

THE PATHOLOGICAL COLLECTION contains above 3,000 specimens, arranged in series as follows:—Injuries and Diseases of the Organs of Motion; of the Organs of Digestion, of Circulation, of Respiration, of the Nervous System, of the Genito-Urinary System, and Malformations. The descriptive Catalogue of this collection has been entirely re-written by Mr. Shattock: the previous edition was edited by Mr. Sydney Jones.

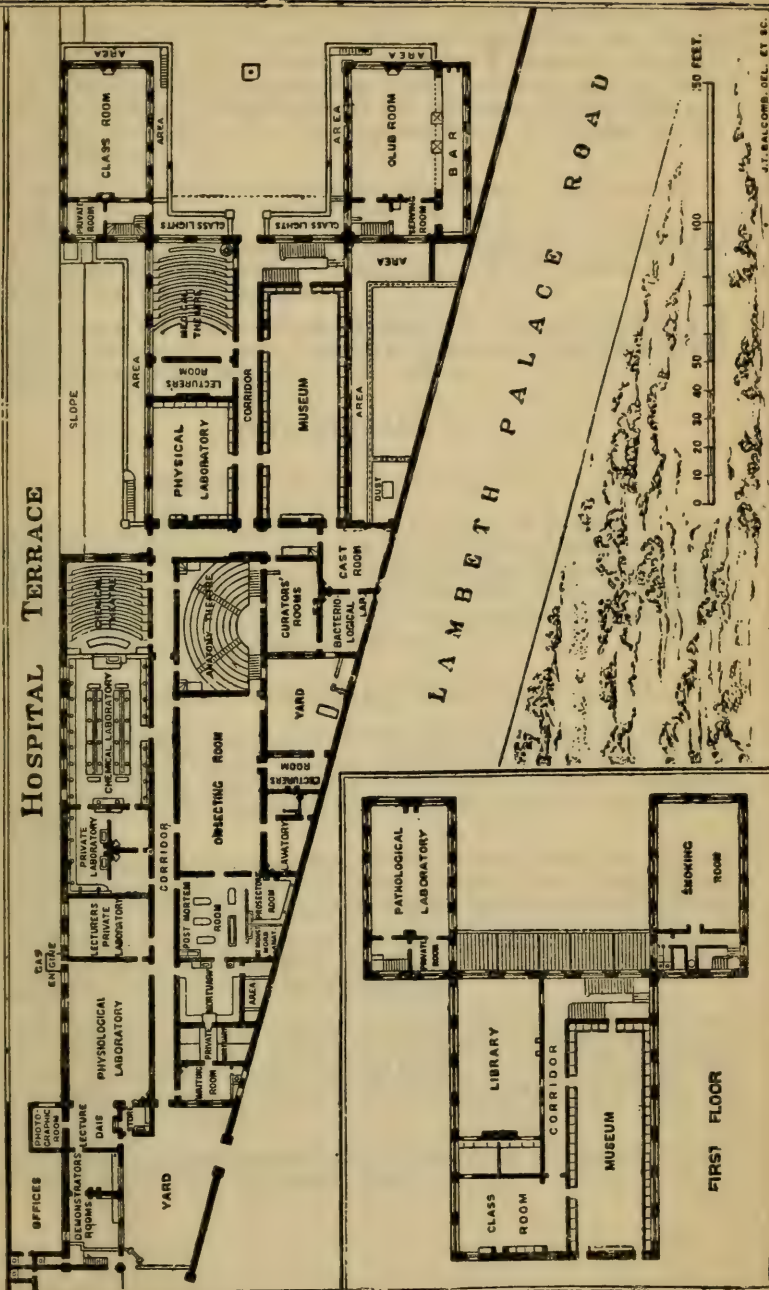
Among the earliest contributors to the Museum were Mr. Cline, Sir A. Cooper, Mr. Travers, and Mr. Tyrrell; and many of the specimens are of great historical interest: those used by Sir A. Cooper to illustrate his works on Dislocations and Fractures, on Hernia, and on the Testis, are contained amongst them, as well as two preparations showing the result of Ligature of the Abdominal Aorta, one a case of Sir A. Cooper's, another that of Mr. J. F. South's. In the collection, too, are Mr. Travers's preparations illustrating the process of nature in repairing Injuries of the Intestines, and those furnished by his experiments on the ligature of Arteries.

The section of Fractures has been enriched by Sir William MacCormac who presented numerous specimens of gun-shot injuries, etc., obtained from cases under his care during the Franco-German War (1870); that of Diseases of the Liver, by a large number of Biliary Calculi presented by Dr. Ord; and that of Diseases of the Larynx, by specimens presented by Dr. Semon.

THE COLLECTION OF COMPARATIVE ANATOMY comprises about 400 dissected Preparations, and in addition an equal number of most carefully prepared osteological specimens. A large number of these dissections were made by Sir A. Cooper, to illustrate his Lectures, when Professor of Comparative Anatomy to the Royal College of Surgeons. A new Catalogue of this collection has been drawn up by Mr. F. G. Parsons.

THE CABINETS OF MICROSCOPICAL ANATOMY, which are under the charge of the Demonstrator of Practical Physiology, are available for use by Students who wish to examine them, subject to such regulations as may be deemed necessary.

## HOSPITAL TERRACE



[To face p. 14.]





THE MATERIA MEDICA MUSEUM contains in cases a complete collection of all the chemicals and organic substances included in the British Pharmacopœia ; all these are named and numbered. A second collection of all the chief medicinal substances is placed in drawers and is freely accessible to students. A large and very fine collection of dried medicinal plants, named according to the latest nomenclature, is displayed on the walls of the Museum.

The Museum is under the conjoint superintendence of the Lecturer on Pharmacy and Pharmacology and Mr. Shattock.

THE COLLECTION OF CHEMISTRY AND MINERALOGY is under the superintendence of Mr. Dunstan. The majority of the specimens were presented by the late Dr. Bernays.

The Museums are open to Students daily from 9 a.m. till 5 p.m., and every encouragement is given to Students to make use of the well-arranged educational series for the purposes of their studies.

## THE LIBRARY.

*Librarian* :—G. S. SAUNDERS, ESQ.

The Library, to which Students have access with the permission of the Librarian, and which can be used by them as a Reading Room, has been recently completely re-arranged and re-catalogued, and electric lighting has been introduced. It contains a valuable collection of standard works ; various periodicals are regularly taken in, and a number of modern text books are added from time to time for reference.

## LABORATORIES, THEATRES AND CLASS ROOMS.

The Chemical, Physiological, and Anatomical Departments are complete in themselves. They consist of large Laboratories for Classes, Private Laboratories, and each is provided with its own Lecture Room. A separate Laboratory for the practical teaching of Physics contains the Physical Apparatus.

The Pathological Department beyond the Museum and Post Mortem rooms is provided with a large Laboratory for the Class in Pathological Histology, and a Bacteriological Laboratory under the charge of Mr. Shattock.

The Elementary Biology lectures and demonstrations are given in the large new Laboratory, and the Biological Dissecting Room and Lecturers Private Room are contained in the same building

A special Theatre is devoted to the use of the Lecturers giving the more advanced systematic courses, such as Medicine, Surgery, &c., and two large class rooms are available for the Tutorial Classes held in connection with these courses. Special accommodation has also been provided for the Classes in Operative Surgery.

The new buildings were opened by H.R.H. the Duke of Connaught, K.G., President of the Hospital on June 9th, 1894.



## MEDICAL AND SURGICAL OFFICERS.

**Consulting Physician.**—JOHN HARLEY, M.D. Lond.

**Consulting Surgeons.**—Sir JOHN SIMON, K.C.B., Hon. M.D. Dub., F.R.S., D.C.L.; SYDNEY JONES, M.B. Lond.; JOHN CROFT; Sir WILLIAM MAC-CORMAC, Bart., M.A., D.Sc., M. Ch. Hon. Causà, Pres. R.C.S. Eng.

**Consulting Obstetric Physician.**—H. GERVIS, M.D. Lond.

**Consulting Ophthalmic Surgeons.**—R. LIEBREICH; E. NETTLESHIP.

### Physicians.

W. M. ORD, M.D. Lond.

J. F. PAYNE, M.D. Oxon.

S. J. SHARKEY, M.A., M.D. Oxon.

T. D. ACLAND, M.A., M.D. Oxon.

### Assistant Physicians.

H. P. HAWKINS, M.A., M.D. Oxon.

H. W. G. MACKENZIE, M.A., M.D.

Cantab.

H. G. TURNER, M.A., M.D. Oxon.

### Obstetric Department.

*Physician.*—C. J. CULLINGWORTH, M.D.

*Assistant Physician.*—W. W. H. TATE, M.D. Lond.

### Throat Department.

### Vaccination Department.

*Physician.*—R. CORY, M.A., M.D. Cantab.

### Electrical Department.

*Physician.*—H. G. TURNER, M.A., M.D. Oxon.

### Resident Assistant Physician.

C. R. BOX, M.D. Lond.

### Surgeons.

A. O. MACKELLAR, M.Ch.

H. H. CLUTTON, M.A. Cantab.

WILLIAM ANDERSON.

B. PITTS, M.A., M.C. Cantab.

### Assistant Surgeons.

G. H. MAKINS.

W. H. BATTLE.

C. A. BALLANCE, M.S. Lond.

H. B. ROBINSON, M.S. Lond.

### Eye Department.

*Surgeon.*—J. B. LAWFOED.

*Assistant Surgeon.*—J. H. FISHER, B.S. Lond.

### Skin Department.

*Surgeon.*—WILLIAM ANDERSON.

### Ear Department.

*Surgeon.*—C. A. BALLANCE, M.S. Lond.

### Dental Department.

*Surgeon.*—C. E. TRUMAN, M.A. Cantab.

### Anæsthetists.

WALTER TYRRELL, E. F. WHITE, F.R.C.S.,

E. H. G. MORRIS, B.A., M.B. Cantab., H. LOW, M.A., M.B., B.C. Cantab.

### Demonstrators of Morbid Anatomy.

H. P. HAWKINS, M.A., M.D. Oxon. H. W. G. MACKENZIE, M.A., M.D. Cantab.

H. G. TURNER, M.A., M.D. Oxon.

### Consulting Chemist.

WYNDHAM R. DUNSTAN, M.A. Oxon., F.R.S.

### Pharmaceutist.

EDMUND WHITE, B.Sc. Lond.

### Superintendent of the X Ray Department.

A. BARRY BLACKER, M.D.

### Superintendent of the Clinical Laboratory.

L. L. JENNER, M.A., M.B. Oxon.

### Registrars.

#### *Surgical.*

A. E. RUSSELL, M.B. E. O. THURSTON, F.R.C.S. A. F. STABB, M.B., B.C. Lond. Cantab.

#### *Obstetric.*

### Lecturers.

A. W. BENNETT, M.A., B.Sc. Lond. H. RAYNER, M.D.

T. GREGOR BRODIE, M.D. Lond. EDWARD SEATON, M.D.

WYNDHAM R. DUNSTAN, M.A., F.R.S. S. G. SHATTOCK, F.R.C.S.

F. G. PARSONS, F.R.C.S.

### Curator of the Museum.

S. G. SHATTOCK, F.R.C.S.

### Librarian.

G. S. SAUNDERS.

### Dean of the School.

H. P. HAWKINS, M.A., M.D. Oxon.

### Secretary to the School.

GEORGE RENDLE, M.R.C.S.

## LECTURERS AND DEMONSTRATORS.

## LECTURERS.

<i>Elementary Biology</i> ... ..	Mr. PARSONS.
<i>Chemistry, Chemical Physics, and Practical Chemistry</i> ... ..	Mr. DUNSTAN.
<i>Descriptive Anatomy</i> ... ..	Mr. ANDERSON and Mr. MAKINS.
<i>General Anatomy and Physiology</i> ... ..	Dr. BRODIE.
<i>Practical Physiology and Histology</i> ... ..	
<i>Midwifery, and Diseases of Women</i> ...	Dr. CULLINGWORTH.
<i>Practical and Manipulative Surgery</i> ...	Mr. MACKELLAR & Mr. BALLANCE.
<i>Medicine</i> ... ..	Dr. PAYNE and Dr. SHARKEY.
<i>Surgery</i> ... ..	Mr. CLUTTON and Mr. PITTS.
<i>Pathology and Bacteriology</i> ... ..	Dr. HAWKINS and Mr. SHATTOCK.
<i>Forensic Medicine and Toxicology</i> ... ..	Dr. CORY and Dr. TURNEY.
<i>Pharmacology and Therapeutics</i> ... ..	Dr. MACKENZIE.
<i>Diseases of the Eye</i> ... ..	Mr. LAWFORD.
<i>Mental Diseases</i> ... ..	Dr. RAYNER.
<i>Public Health and Sanitary Science</i> ...	Dr. SEATON.
<i>Clinical Surgery</i> ... ..	Sir WILLIAM MACCORMAC, Bart. (EMERITUS LECTURER).
<i>Clinical Medicine</i> ... ..	
"    " <i>Obstetric</i> ... ..	The PHYSICIANS.
" <i>Surgery</i> ... ..	Dr. CULLINGWORTH.
"    " <i>Ophthalmic</i> ... ..	The SURGEONS.
<i>Physics</i> ... ..	Mr. LAWFORD.
<i>Botany</i> ... ..	Mr. DUNSTAN.
<i>Comparative Anatomy and Zoology</i> ...	Mr. BENNETT.
	Mr. PARSONS.

## TEACHERS AND DEMONSTRATORS.

<i>Chemistry</i> ... ..	Dr. CROSSLEY and Mr. LE SUEUR.
<i>Physics</i> ... ..	Mr. LE SUEUR.
<i>Practical Pharmacy</i> ... ..	Mr. EDMUND WHITE.
<i>Practical Anatomy</i> ... ..	The LECTURERS, with Mr. PARSONS, Mr. ROBINSON, Mr. STABB, and Mr. FISHER.
<i>Physiology and Practical Physiology</i> ...	
<i>Practical Medicine</i> ... ..	Dr. BRODIE, with Mr. SIKES.
<i>Practical and Manipulative Surgery</i> ...	Dr. MACKENZIE and Dr. TURNEY, with Mr. RUSSELL.
<i>Practical Obstetrics</i> ... ..	
<i>Electro-Therapeutics</i> ... ..	The LECTURERS, with Mr. STABB.
<i>Morbid Anatomy</i> ... ..	Dr. TATE.
<i>Morbid Histology and Bacteriology</i> ... ..	Dr. TURNEY.
<i>Diseases of the Eye</i> ... ..	Dr. HAWKINS, Dr. MACKENZIE, and Dr. TURNEY.
"    " <i>Throat</i> ... ..	
"    " <i>Skin</i> ... ..	Dr. JENNER.
"    " <i>Ear</i> ... ..	Mr. FISHER.
"    " <i>Teeth</i> ... ..	Mr. ANDERSON.
<i>Vaccination</i> ... ..	Mr. BALLANCE.
	Mr. TRUMAN.
	Dr. CORY.

## SUGGESTIONS TO STUDENTS ABOUT TO ENTER THE MEDICAL PROFESSION.

### Registration.\*

The commencement of Medical Study cannot be registered at the Office of the General Medical Council until the Student has passed a Preliminary Examination in the subjects of General Education as specified in the following list :

(1) English Language ; (2) Latin ; (3) Arithmetic, Algebra, and Euclid--Books I., II., III. ; (4) Either Greek, Logic or any Modern Language.

### Preliminary Examinations.

A student who has not passed such an examination is recommended to pass either the Matriculation of the University of London, or the Professional Preliminary Examination of the College of Preceptors. The regulations respecting these may be obtained from the Registrar, University of London, Burlington Gardens, W., and the Secretary, College of Preceptors, Bloomsbury Square, W.C.

Certificates of Graduation, Matriculation, and the Local Examinations of British and Colonial Universities are accepted by the General Medical Council provided that the above-mentioned subjects be shown to have been included.

### London University.

Students who propose to obtain Medical Degrees in the University of London must pass both the Matriculation and the Preliminary Scientific Examinations before commencing their regular Medical Studies.

For the Preliminary Scientific Examination and the Intermediate Examination in Medicine special classes are held during the Winter and Summer Sessions (see p. 38).

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**For a Student who enters in October**, intending to obtain the double qualification of the "Conjoint Board" (L.R.C.P. Lond. and M.R.C.S. Eng.), the following course of study is recommended. (For days and hours of Lectures, &c., see Time Table, p. 28.)

All Students are required to apply to the Medical Secretary for cards of Admission to the Lectures, &c., of each Session.

### First Winter Session.

#### Lectures.&c.

Anatomy, Elementary Biology, Elementary Physiology, Chemistry, Practical Chemistry, and Physics. Anatomical and Physiological Demonstrations. Dissections.

#### Examinations.

"Sessional" at Medical School in December and in March. Part III. (Elementary Biology) of First Examination of the "Conjoint Board," in March.

### First Summer Session.

#### Lectures.&c.

Chemistry, Practical Chemistry, Histology, Demonstrations in Practical Pharmacy ; Practical Instruction in Pharmacy may be obtained from the Hospital Pharmaceutist. (Fee, three guineas for three months, p. 37.)

#### Examinations.

"Sessional," and Parts I. (Chemistry and Physics) and II. (Practical Pharmacy)† of the "First Conjoint," in July.

\* The Regulations of the General Medical Council with regard to Registration may be obtained from Messrs. Spottiswoode & Co., 54, Gracechurch Street, London, E.C.

† Part II. (Practical Pharmacy) may be deferred and taken at any time during the curriculum.

### Second Winter Session.

Anatomy and Physiology with Demonstrations and Dissections. Lectures.  
 Practical and Chemical Physiology. Tutorial Classes in Anatomy and Physiology.

"Sessional" in December and in March; "Tests," and "Second Conjoint" (Anatomy and Physiology) in March. Examinations.

N.B.—The importance of passing the second examination at this stage cannot be too strongly insisted upon, as the Student then becomes free to devote his undivided attention to the practical subjects of the curriculum needed for the final examination.

### Second Summer Session

Hospital Practice, Medical and Surgical

Midwifery, Practical Surgery.

"Sessional" in July.

The course of instruction in Practical Medicine must be attended by Candidates for Out-Patient Clinical Clerkships, and the course of Elementary Practical Obstetrics by Candidates for Obstetric Clerkships.

Lectures.  
 Examinations

### Third Winter Session.

Hospital Practice, Medical and Surgical.

Medicine, Surgery, and Surgical Pathology, Practical Surgery, Practical Course of Pathological Anatomy. Lectures.

"Sessional" in December and March.

Clinical Clerkship (if not held during July, August, and September), and Dressership, in the Out-Patient Departments.

Maternity Cases may be attended at any time after the Lectures on Midwifery and a course of Practical Obstetrics by Students who have passed the "Second Conjoint."

Examinations.

### Third Summer Session.

Hospital Practice, Medical and Surgical, with Clerkship or Dressership.

Pathological Anatomy, including Practical instruction in Bacteriology, Forensic Medicine, Mental Disease, Therapeutics, and Public Health. Lectures

"Sessional" in July.

Examinations.

### Fourth Winter Session.

Hospital Practice, Medical, Surgical, the Special Departments, and Post-mortem Examinations. Clerk or Dress in special Departments and Post-mortem Room. Instruction in Vaccination (Fee, one guinea, p. 37).

Practical Course of Pathological Anatomy (if not taken in third winter), Clinical Lectures on Medicine and Surgery; Obstetric Demonstrations; Diseases of Women; Diseases of the Eye.

Lectures.

### Fourth Summer Session.

Hospital Practice, Medical and Surgical, and Special Departments. Clinical Medicine, Clinical Surgery.

Lectures.

### Fifth Year.

Hospital Practice, Medical and Surgical, and the Special Departments.

Tutorial Classes in Medicine, in Surgery, including operations upon the Dead Subject, and in Midwifery.

Attendance at a Fever Hospital and Clinical Demonstrations at a recognised Lunatic Asylum.



Advanced Students are strongly advised to avail themselves of the opportunities afforded for Clinical Study of Fevers at the Hospitals of the Metropolitan Asylums Board, and of Mental Diseases at Bethlem Hospital in their fifth year.

Candidates for part III. of the Final Examination for the Diploma in Medicine and Surgery of the "Conjoint Board" are required to produce a certificate of attendance on not less than twenty labours. Students who have passed the "Second Conjoint," and have attended Lectures on Midwifery, and a Course of Elementary Practical Obstetrics, may enter their names for the Rota of Obstetric Clerks.

Examina-  
tions.

No Student is admitted to part I. or II. of the Third Examination of the "Conjoint Board" until at least two years after passing the Second Examination, and five Winter and five Summer Sessions after Registration.

#### Preliminary Summer Session.

If a Student enters in May, intending to obtain the qualification of the Conjoint Board, he is advised to pursue the following course of study:—

Lectures.

Elementary Biology, Lectures and Classes in Chemistry and Demonstrations in Practical Pharmacy.—Practical Instruction in Pharmacy may be obtained from the Hospital Pharmaceutist (Fee, three guineas for three months, p. 37).

Botany (if required for a higher examination).

Examina-  
tions.

Part II. (Practical Pharmacy) of "First Conjoint" in July or October.

NOTE.—Students who join a Medical School in May have the advantage of an additional three months to devote to the preparation for the three parts of the First Examination of the "Conjoint Board," and of passing in Elementary Biology at Christmas.



All Students are required by the Governors to conform to the Regulations of the Hospital and Medical School, and the School Committee is empowered, with the approval of the Treasurer, to suspend or remove a Student at any time for adequate reason. (See also p. 36.)

During the fourth and fifth years, the greater part of the time can, and should, be given to the practical study of disease in the Wards, Out-Patient Departments, and Post-Mortem Room, but Students are reminded that such courses of lectures as relate to Final Examinations may be with advantage re-attended.

Students intending to prepare for **University Degrees and other higher Examinations** should apply to the Medical Secretary for the Regulations relating thereto. (For Special Classes for these Examinations see p. 38.)

Students when qualified should use every effort to obtain one or more of the senior appointments open to them, especially those of House Physician, House Surgeon, and Obstetric House Physician. These and other appointments, of which details are given at p. 31, afford opportunities for obtaining practical professional knowledge which cannot be estimated too highly. No payment is required for any of them.

**N.B.—The Regulations for the Sessional Examinations and Prizes will be found on pp. 32-33.**



# HOSPITAL PRACTICE.

## CLINICAL TEACHING OF MEDICINE AND SURGERY.

CLINICAL instruction is given daily by the Physicians and Surgeons during their visits to the Wards, and by the Assistant Physicians and Assistant Surgeons in the Out-Patient Departments (Time Table, p. 22). Lectures on Clinical Medicine and Surgery are given in the afternoon every week throughout the academical year by one or more of the Physicians and Surgeons. A Special Course is also given by Sir W. MACCORMAC, Bart.

**Diseases of Women.**—Clinical instruction is given in Adelaide Ward on Tuesdays and Fridays at 2 p.m., and in the Out-Patient room on Wednesdays and Saturdays at 1.30 p.m.

**Diseases of Children.**—Instruction is given in the Out-Patient room, on Saturdays at 1.30.

**Midwifery.**—A maternity department is connected with the hospital, women being attended in confinement at their own homes by students of the hospital, under the supervision of the Assistant Obstetric Physician (p. 32). Students are, when possible, accompanied to their first three cases by one of the Obstetric House Physicians.

**Diseases of the Eye.**—Clinical teaching in the Out-Patient rooms daily except Saturday (Time Table p. 22). Clinical Lectures or Ophthalmoscopic Demonstrations weekly.

## DAYS AND HOURS FOR SURGICAL OPERATIONS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Surgical Operations.....	2.0	3.30	2.0	2.0	3.30	2.0
Gynæcological „ .....	—	—	—	2.0	—	—
Ophthalmic „ .....	—	—	—	2.0	—	—

**Diseases of the Skin.**—Clinical instruction by Mr. ANDERSON on Fridays.

**Diseases of the Throat.**—Clinical instruction by the Surgeon in charge and Assistant on Tuesdays and Fridays. During the Winter Session a short course of Clinical Lectures is given to senior students.

**Diseases of the Ear.**—Clinical instruction by Mr. BALLANCE on Mondays. During the Winter Session Mr. BALLANCE gives a short course of Lectures to senior students.

**Mental Diseases.**—Clinical instruction by Dr. RAYNER on Thursdays.

**Diseases of the Teeth.**—Mr. TRUMAN and Assistant give instruction in Dental Surgery on Tuesdays and Fridays.

**Vaccination** is taught practically by Dr. CORY, who is authorised by the Local Government Board to give certificates of proficiency in Vaccination at St Thomas's Hospital. Fee, One Guinea (see p. 37).

**Electro-Therapeutics.**—Instruction is given by Dr. TURNEY on Thursdays.

**Anæsthetics.**—The mode of Administration is taught practically by Mr. TYRRELL, Mr. WHITE, Mr. MORRIS, and Mr. LOW.

## POST MORTEM EXAMINATIONS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Dr. HAWKINS .....	—	2.0	—	—	2.0	—
Dr. MACKENZIE .....	2.0	—	—	2.0	—	—
Dr. TURNEY .....	—	—	2.0	—	—	2.0

# TIMES OF ATTENDANCE OF THE PHYSICIANS AND SURGEONS IN THE WARDS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
DR. PAYNE .....	2	—	—	2	—	—
DR. SHARKEY .....	—	2	—	—	2	—
DR. ACLAND.....	2	—	—	2	—	—
DR. CULLINGWORTH .....	—	2	—	—	2	—
MR. MAC KELLAR.....	2	—	—	2	—	—
MR. CLUTTON .....	—	2	—	—	2	—
MR. ANDERSON .....	2	—	—	2	—	—
MR. PITTS .....	—	2	—	—	2	—
MR. LAWFORD .....	—	2	—	—	2	—

# TIMES OF ATTENDANCE OF THE ASSISTANT-PHYSICIANS AND ASSISTANT-SURGEONS IN THE OUT-PATIENTS' ROOMS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
DR. HAWKINS.....	1.30	—	—	1.30	—	—
DR. MACKENZIE .....	—	—	1.30	—	—	1.30
DR. TURNEY .....	—	1.30	—	—	1.30	—
DR. TATE (Women and Children)...	—	—	1.30	—	—	1.30
MR. MAKINS .....	1.30	—	—	1.30	—	—
MR. BATTLE .....	—	1.30	—	—	1.30	—
MR. BALLANCE .....	—	—	1.30	—	—	1.30
MR. ROBINSON .....	1.30	1.30	—	—	—	—

# TIMES OF ATTENDANCE IN THE OUT-PATIENT SPECIAL DEPARTMENTS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
MR. LAWFORD } (Diseases of {	—	1.30	—	1.30	1.30	—
MR. FISHER } the Eye) {	1.30	—	1.30	—	—	—
(Diseases of Throat)...	—	1.30	—	—	1.30	—
MR. ANDERSON (Diseases of Skin)..	—	—	—	—	1.30	—
MR. BALLANCE (Diseases of Ear)..	1.30	—	—	—	—	—
DR. TURNEY (Electro-Therapeutics)	—	—	—	2	—	—
DR. BLACKER (X Ray) .....	—	2	—	—	2	—
MR. TRUMAN (Diseases of Teeth)..	—	10	—	—	10	—
DR. CORY (Vaccination) .....	—	—	11.30	—	—	—
DR. RAYNER (Mental Diseases) ...	—	—	—	10	—	—

# LECTURES, CLASSES, & DEMONSTRATIONS

*A complete list of Lecturers and Demonstrators, p. 17.*

*Time-table of days and hours of Lectures, &c., p. 28.*

## ELEMENTARY BIOLOGY.

MR. BENNETT, B.Sc., AND MR. PARSONS.

A six months' practical course to meet the requirements of the "Conjoint Board" is held from October to March, and a revision class from May to July.

*Special classes*, for the Preliminary Scientific, are commenced in October for the July examination of the University of London. (Fee, see p. 38.)

## BOTANY.

MR. BENNETT, B.Sc.

A course of lectures on Systematic Botany is given during the Summer Session. It comprises the general principles of the classification of plants, with demonstrations of the characters of all the more important natural orders, especially those of medicinal value. The lectures are illustrated by diagrams and fresh specimens. (Fee, see p. 37.)

*Special classes* for the London University and other examinations commence in October. (Fee, see p. 38.)

## COMPARATIVE ANATOMY.

MR. PARSONS.

A course of six lectures, especially intended for the primary examination for the Fellowship of the College of Surgeons, is given twice yearly. (Fee, see p. 37.)

## CHEMISTRY AND CHEMICAL PHYSICS.

MR. DUNSTAN, F.R.S.

LECTURES on Chemistry and Chemical Physics are given three times weekly during the Winter Session, and on Chemistry during the Summer Session. These lectures are fully illustrated by experiments.

A course of Practical Work is commenced in January and is continued during the Summer Session.

These courses include the subject-matter of the various Examining Boards, and are specially arranged to afford the student an insight into the principles of chemical science and their application in Medicine.

A course of Chemical Demonstrations is given in connection with the Lectures on Toxicology and Forensic Medicine.

*Special classes* are held for students preparing for the Preliminary Scientific and Intermediate M.B. Examinations of the University of London, and for the Examinations of other Universities. (Fee, see p. 38.)

*A special course* of Practical Instruction is given in the Laboratory to Candidates for Diplomas in Public Health. (Fee, see p. 37.)

Arrangements may be made for additional Practical Work (Elementary and Advanced) in the Chemical Laboratory at fees which may be ascertained from the Medical Secretary.

## ANATOMY.

MR. ANDERSON AND MR. MAKINS.

(a) **ELEMENTARY.**—A six months' course, consisting of two lectures and one oral examination weekly, is given for first-year students, dealing with osteology and attachments of muscles and ligaments.

(b) **ADVANCED.**—A six months' course, consisting of three lectures and one oral examination weekly, is given for second-year or more advanced students.

The lectures are illustrated by fresh dissections and preparations.

Classes, conducted partly by examination, partly by demonstration, are held during the latter half of the Winter Session, and deal with those sections of anatomy which cannot be included in the lecture course.

(c) PRACTICAL.—During both winter and summer sessions the dissecting room is open for the use of students, and the demonstrators attend daily. A number of stock preparations are displayed in the room, and the others are preserved for use in the tutorial classes.

Tutorial classes are held prior to the January, March and July examinations of the "Conjoint Board," which all candidates are allowed to attend. A verbal test examination is held three weeks prior to the examinations, at which candidates must satisfy the teachers as to their knowledge before obtaining the necessary signatures to their schedules.

*Special classes* in advanced anatomy are conducted by the lecturers and demonstrators for the various University and the Fellowship of the College of Surgeons examinations. (Fee, see pp. 37, 38.)

## PHYSIOLOGY.

DR. T. GREGOR BRODIE.

A systematic course of lectures is given throughout the Winter and Summer Sessions. As certain portions of the subject are dealt with more fully in some years than in others Students are required to attend the course both in the first and second years.

An elementary tutorial class for first year students is held twice a week during the first part of the Winter Session.

An elementary practical class for second year Students is held in the first half of the Winter Session. An elementary course of Chemical Physiology, also for second year Students, is given in the second half of the Winter Session.

A practical class in Histology is held three mornings a week during the Summer Session, and is attended by first year Students. Each Student is practically instructed in the methods of preparing histological specimens.

Each Student for the purposes of this class must provide himself with a microscope, slides and cover glasses, drawing-book and pencils, box to hold twelve dozen specimens, forceps, scalpel, scissors, section-lifter, mounted needles, and six watch glasses.

A table, cupboard and drawer, chemicals, staining and mounting fluids, &c., are provided for him. A deposit of 10s. is charged for the use of a key and apparatus, and this is repaid at the end of the course if both are returned in proper order.

Tutorial classes in Physiology are held by the Demonstrators prior to the January, April, and July examinations of the "Conjoint Board."

A *special class* in advanced practical Physiology is held twice a week from October to March and consists of two parts. The first half of the course is devoted to the use and study of those instruments and experiments which are fitted to class work. The second half is a course of advanced Chemical Physiology. During this class, demonstrations are given of many experiments which cannot be carried out by the Students themselves. This class is intended for those preparing for University Examinations (Cambridge, London, Oxford), or for the Fellowship of the College of Surgeons. For attendance in this class a special fee of six guineas is charged.

## PHARMACY, PHARMACOLOGY, AND THERAPEUTICS.

DR. MACKENZIE.

Lectures are given three times a week during the Summer Session, the course being specially adapted to the requirements of candidates for the examination of the "Conjoint Board."

This course embraces the physiological actions of the various medicinal agents on the healthy body, and on general morbid conditions.



Demonstrations are given in the Materia Medica Museum by Mr. White and two assistants.

**PRACTICAL PHARMACY.**—Instruction is given by the Hospital Pharmacist, Mr. E. White, B.Sc., to students requiring it. (Fee, see p. 37.)

*Special classes* are arranged to meet the requirements of—(a) the "Conjoint Board," (b) the intermediate M.B. of the University of London, (c) the first M.B. of Oxford and second of Cambridge.

### **MIDWIFERY AND DISEASES OF WOMEN.**

DR. CULLINGWORTH.

A systematic course of lectures on Midwifery is delivered during the Summer Session, embracing the physiology and pathology of pregnancy, labour, and the puerperal state, preceded by an account of the anatomy and development of the female pelvis, and of the placenta and foetal membranes.

A short course of Obstetric demonstrations on the model is given by Dr. Tate during the Winter Session.

A course of about twenty lectures on the Diseases of Women is delivered during the Winter Session. The lectures are partly systematic and partly clinical, the subjects varying from year to year.

A class is held by the Obstetric tutor for practical instruction in the mechanism and management of labour and the use of instruments. No student is allowed to attend maternity cases until he has attended this class.

Tutorial Classes are held prior to the January, April, and July Examinations of the "Conjoint Board." The Composition Fee provides for attendance on one series of these Classes only.

### **MEDICINE.**

DR. PAYNE AND DR. SHARKEY.

A systematic course of lectures on the Principles and Practice of Medicine is given three times weekly during the Winter Session.

Clinical lectures on Medicine are given once weekly throughout the Academic year, by the physicians to the Hospital in rotation. The subject of each is advertised beforehand in the Hospital and Medical School.

### **PRACTICAL MEDICINE.**

DR. MACKENZIE AND DR. TURNEY.

An elementary course of practical instruction in the means of physical diagnosis is held for about a month prior to each quarterly appointment of out-patient clinical clerks; no student can be appointed until he has attended this class, or an equivalent course elsewhere. Instruction is given in the principles and method of examination of the circulatory, respiratory, urinary, digestive, and nervous systems. Tutorial Classes are held prior to the January, April, and July Examinations of the "Conjoint Board." The Composition Fee provides for attendance on one series of these Classes only.

### **SURGERY.**

MR. CLUTTON AND MR. PITTS.

A systematic course of lectures on General and Special Surgery is given three times weekly throughout the Winter Session. The subject, being too extensive for a six months' course, is completed in two Winter Sessions.

Clinical lectures on Surgery are given once weekly throughout the Academic year, by the surgeons to the Hospital in rotation. The subject chosen for each lecture is advertised beforehand in the Hospital and Medical School.

### **PRACTICAL SURGERY.**

MR. MACKELLAR AND MR. BALLANCE.

During the Summer Session Mr. Ballance holds a class once a week, providing special instruction for students about to apply for Out-patient dresserships. It comprises bandaging, the treatment of wounds the use of



certain instruments and splints, and the demonstration of surgical landmarks on the living model. No student can be appointed a dresser until he has attended this class.

The Winter Course includes the diagnosis and treatment of fractures and dislocations, application of trusses and tourniquets, minor operations, treatment of hæmorrhage and surgical emergencies, and the completion of the Summer Course on instruments and applied anatomy.

The teachers of practical surgery are assisted by Demonstrators, who supervise the students after each lecture in the various manipulations on the living models provided.

Tutorial classes are held for six weeks prior to the January, April, and July examinations of the "Conjoint Board." These include general surgery, operative surgery, and surgical anatomy, by the teachers and Demonstrator of Practical Surgery; and surgical pathology, by Mr. Shattock. The Composition Fee provides for attendance on one series of these Classes only.

### **OPERATIVE SURGERY.**

Classes are held by Mr. MacKellar previous to the January, April, and July examinations of the "Conjoint Board." The operations are performed by the students, subjects being provided at the expense of the school.

*Special classes* are held during the Summer Session and at other convenient times by Mr. Ballance and Mr. Battle, for students preparing for the higher examinations. The number of students to each subject is limited to two. (Fee, see p. 37.)

### **PATHOLOGY, PATHOLOGICAL ANATOMY, AND BACTERIOLOGY.**

DR. HAWKINS AND MR. SHATTOCK.

A course of lectures on General Pathology, Surgical Pathology, and the diseases of special organs is given by Dr. Hawkins and Mr. Shattock throughout the Winter and Summer Sessions. Each lecture is followed by a demonstration, in which the main points are illustrated by microscopical and museum preparations. Illustrative sections for microscopical examination are given to each student for preparation and mounting.

Mr. Shattock's course of lectures deals with morbid growths, with the pathological questions touched upon in the systematic course of Surgery, and with Bacteriology; in the latter subject Students receive practical instruction.

The Demonstrator of Morbid Histology holds occasional classes, in which the microscopical preparations contained in the pathological cabinet are shown and explained.

Students are selected annually to assist the Demonstrator of Morbid Histology.

Post-mortem examinations are performed daily at 2 p.m. by Dr. Hawkins, Dr. Mackenzie, or Dr. Turney, and demonstrations given. Students are appointed to act as clerks, and are required to make examinations under the supervision of the demonstrators.

### **PRACTICAL BACTERIOLOGY.**

A short course is given during May and June by Mr. Shattock. Fee, One Guinea, including materials.

### **FORENSIC MEDICINE AND TOXICOLOGY.**

DR. CORY AND DR. TURNEY.

A three months' course of lectures is given during the Summer Session, jointly by Dr. Cory and Dr. Turney.

The lectures cover the synopses of the various Examining Boards, and are supplemented in the toxicological section by demonstrations by Dr. Crossley.

## MENTAL DISEASES.

DR. RAYNER.

A three months' course of lectures is given during the Summer Session, comprising Symptomatology, Causation, States and Forms of Disease.

1. Mental Defects—Idiocy, Imbecility, etc.
2. Mental disorders—(a) States of Mental Depression, Melancholia, etc. ; (b) States of Mental Exaltation, Mania, etc. ; (c) States of Stupor ; (d) States of Chronic Disorder, and Dementia.
3. Mental disorder in relation to diseases, causes, etc.
  - (a) General paralysis, epilepsy, and other neuroses. (b) Insanities of puberty, adolescence, pregnancy, parturition and lactation ; climacteric and senile insanities. (c) Insanities from injury, heat-stroke, fevers, etc. (d) Insanities from alcohol, lead, and other toxic agencies. (e) Insanity from gout, phthisis, and associated bodily diseases.
4. General Pathology.

Clinical Instruction is given by visits to Bethlem Hospital and other institutions for the Insane and Imbecile.

## DISEASES OF THE EYE.

MR. LAWFORD AND MR. FISHER.

A course of about thirty lectures on the principal disorders and diseases of the Eye and its appendages is given during the Winter Session. Patients are frequently shown, or illustrative cases described. A lecture or demonstration of cases is given weekly during the Summer Session.

An elementary class for learning the use of the Ophthalmoscope is held in October, January, and May. Ophthalmoscopic cases are shown once a week during the Winter Session.

Oral classes and demonstrations are held in connection with the Surgical tutorial classes for the examinations of the "Conjoint Board."

*A Special Course* of operations on the dead subject is given by Mr. Fisher. (Fee, see p. 37.)

## PUBLIC HEALTH.

DR. SEATON.

A course of lectures is given during the Summer Session, including :—

Water, Air, Soil, Food, the Dwelling—in relation to Health and Disease—Infectious and Epidemic Diseases, the principles of preventive measures—Quarantine Isolation—Hospitals, temporary or permanent—Provisions of the Act for Notification of Diseases—The principles of Disinfection and the mode of action of the chief disinfecting agents—Vaccination—Statistics in relation to public health—Statutes relating to public health—The powers and duties of Sanitary Authorities and their officers—Construction and Ventilation of Sewers, methods of sewage disposal and purification—Trades regulated under the Public Health Acts.

The lectures are usually supplemented by Public Health demonstrations, relating to water supply, systems of sewage disposal and purification, establishment and arrangement of Isolation Hospitals, house drainage, &c.

*Special Classes.*—A six months' course of laboratory instruction for the various diplomas in public health is given by Dr. Seaton, Mr. Shattock, and Mr. Dunstan. (Fee, see p. 37.)

A shorter course of one or two months for students who do not need the above is also given. (Fee, see p. 37.)

St. Thomas's Hospital Medical School is one of the institutions recognised by the Royal Colleges of Physicians and Surgeons for the course of laboratory instruction.

# DAYS AND HOURS OF LECTURES AND DEMONSTRATIONS. WINTER SESSION.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Years of Attendance
Elementary Biology, p. 23 .....	—	12	—	12	—	—	1st Year.
Physics, Chemistry & Practical Chemistry, p. 23 .....	—	—	12	—	12	10.30	do.
Descriptive and Surgical Anatomy, p. 23 {	—	9.30	—	9.30	—	9.30	do.
	9.30	—	9.30	—	9.30	11	2nd Year.
Anatomical Demonstrations, p. 24 .....	10½-4½	10½-4½	10½-4½	10½-4½	10½-4½	10½-1	1st & 2nd.
Physiology, p. 24 .....	10.45	—	10.45	10.45	—	—	do.
Physiological De- } Oct., Nov., Dec.	—	—	9.30	—	9.30	—	1st Year.
monstrations, p. 24 } Oct. to Mar.	—	10.45	—	—	10.45	—	2nd Year.
Practical Surgery, p. 26, Oct., Nov., Dec.	—	—	9*	—	—	—	3rd Year.
Comparative Anatomy (six lectures), p. 23	—	—	11	—	—	—	3rd Year.
Medicine, p. 25 { 1st and 3rd six weeks	—	4	—	4	4	—	do.
{ 2nd and 4th six weeks	12.30	—	12.30	4	—	—	
Surgery, p. 25 .....	9	—	—	9	—	9	do.
Bacteriology and Surgical Pathology, p. 26	—	—	—	12.30	12	—	do.
Diseases of Women, p. 25, Oct., Nov., Dec.	—	9	—	—	9	—	3rd or 4th.
Pathological Anatomy (Practical), p. 26 ..	—	—	—	—	—	11½-1½	do.
Diseases of the Eye, { Oct., Nov., Dec.	5	—	—	—	5	—	do.
p. 27 { Jan., Feb., Mar.	—	—	—	—	5	—	do.
Obstetric Demonstrations (six), p. 25 ...	—	—	4	—	—	—	do.

## SUMMER SESSION.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Years
Botany, p. 23 .....	—	10	10	—	—	—	1st Year.
Elementary Biology, p. 23 .....	2	—	2	—	—	—	do.
Practical Pharmacy (Demonstration), p. 25	—	—	—	2	—	—	do.
Chemistry and Practical Chemistry, p. 24..	11-1	—	—	—	10-1	11-12½	do.
Physiology, p. 24..... { Lecture .....	—	10	10	10	—	—	do.
{ Practical Class	—	11-1	11-1	11-1	—	—	do.
Anatomical Demonstrations, p. 24 .....	11-4	11-4	11-4	11-4	11-4	11-1	2nd Year.
Midwifery, p. 25 .....	—	9	9	9	9	—	do.
Comparative Anatomy (six lectures), p. 23	—	—	—	—	2	—	do.
Practical and Manipulative Surgery, p. 25	9	—	—	—	—	—	do.
Pathological Anatomy, p. 26 .....	—	—	12	—	12	—	3rd Year.
Do. Demonstration, p. 26 .....	—	—	—	—	—	11	do.
Forensic Medicine, p. 26 .....	4	—	—	4	—	9	do.
Mental Diseases, p. 27.....	—	—	—	12.30	—	—	do.
Public Health and Sanitary Science, p. 27	12	—	—	—	—	—	do.
Pharmacology and Therapeutics, p. 24 ...	—	—	4.30	—	4.30	12	do.
Diseases of the Eye, p. 27 .....	—	—	—	5	—	—	3rd or 4th.
Practical Bacteriology (six meetings), p. 26	—	—	—	12	—	—	do.

*The times of delivery of the Clinical Lectures are arranged, in accordance with other work, in the course of the Session.*

## SCHOLARSHIPS, PRIZES, APPOINTMENTS, & HONORARY DISTINCTIONS.

### OPEN SCHOLARSHIPS IN NATURAL SCIENCE.\*

As an inducement to the study of Natural Science before the commencement of the strictly Medical Course, two Scholarships, of the value of £150 (*i.e.*, a free admission) and £60 respectively, are awarded annually, after an examination in Physics, Chemistry, and either Botany, Zoology or Physiology, at the option of Candidates. The Medical School Committee is empowered to grant an Exhibition of £20 to any *unsuccessful* competitor who obtains sufficient marks to qualify for a Scholarship.

These Scholarships are open to all Students not exceeding 24 years of age who have passed a recognised Preliminary Examination in Arts, and have not yet attended Lectures on Anatomy of the first year, without any condition as to their becoming Students of the Hospital, except in the case of successful Candidates, who must enter at once for the full curriculum. The Examination will be conducted by means of written papers and practical work, and will be held on the 28th, 29th, and 30th of September, 1897. The standard, so far as the subjects are the same, will be that of the Preliminary Scientific Examination for Honours of the University of London. Competitors are required to send in their names with choice of optional subject and Certificate of Birth and of Preliminary Examination to the Medical Secretary not later than September 19th.

### SCHOLARSHIP IN ANATOMY, PHYSIOLOGY & CHEMISTRY.\*

A Scholarship of the value of £50 will be offered for competition in the last week of September. It is open to Students who have completed their examinations in Anatomy, Physiology, and Materia Medica and Pharmacy for a Medical Degree in any of the Universities of the United Kingdom, and have not entered as Students in any London Medical School.

### THE WILLIAM TITE SCHOLARSHIP.

This Scholarship, founded by the late Sir W. TITE, C.B., M.P., F.R.S., of the value of £27 10s., is awarded each year to the Student placed highest in the 1st Class List in the examinations at the end of the first Winter Session. Preference, in case of equality between Students, is to be given to the son of a medical man, and more particularly of one who has been educated at St. Thomas's Hospital or is in Practice in Bath.

### THE MUSGROVE SCHOLARSHIP.

This Scholarship, founded by Sir JOHN MUSGROVE, Bart., the late President of the Hospital, of the value of £38 10s., is awarded biennially to the Student who shall take the highest place in the 1st Class List in the examinations at the end of the Second Winter Session. It is tenable for two years, provided the holder obtains a place in the 1st Class in the Examinations at the end of the third winter.

### THE PEACOCK SCHOLARSHIP.

This Scholarship, founded by the will of the late Dr. THOMAS BEVILL PEACOCK, for many years Physician, and at the time of his death Consulting Physician to St. Thomas's Hospital, is of the same value as the Musgrove Scholarship; is awarded and held upon the same terms; and is given every second year in alternation with that Scholarship.

### THE BEANEY SCHOLARSHIP.

This Scholarship, founded by the will of the late Dr. BEANEY, of the value of £50, is awarded biennially, after an examination in Surgery and Surgical Pathology, to a student who shall have completed his fifth but not his seventh year. The examination is held during the Summer Session.

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\* The Examination Papers of last year may be had on application to the Medical Secretary.



## THE SALTERS' COMPANY RESEARCH FELLOWSHIP.

This Fellowship of the annual value of £100 has been established and endowed by the Salters' Company, with a view to the promotion of research in Pharmacology. The Fellowship is awarded to a properly qualified person by the Company on the nomination of the Treasurer of St. Thomas's Hospital and a Committee of Selection. It may be held for a term of three years, the Fellow carrying on his researches at St. Thomas's Hospital and giving annual evidence of the performance of satisfactory work to the Committee of Selection. The Fellow is required to devote his whole time to research and to hold no other office or appointment except by special permission of the Salters' Company, granted on the strong recommendation of the Committee of Selection.

## PRIZES.

The following Scholarships, Prizes, and Medals, will be offered for Competition during the year 1897-1898 :—

TWO OPEN SCHOLARSHIPS IN NATURAL SCIENCE of the value of £150 and £60 respectively, at the commencement of the 1st year.

ONE OPEN SCHOLARSHIP IN ANATOMY, PHYSIOLOGY AND CHEMISTRY of the value of £50, at the commencement of the 3rd year.

### AT THE END OF FIRST YEAR.

<i>Winter.</i>	1st.	...	The William Tite Scholarship	...	...	£27 10s.
	2nd.	...	College Prize	...	...	£20.
	3rd.	...	Ditto	...	...	£10.
<i>Summer.</i>	1st.	...	College Prize	...	...	£15.
	2nd.	...	Ditto	...	...	£10.

### SECOND YEAR.

<i>Winter.</i>	1st.	...	The Peacock Scholarship	...	...	£38 10s.
	2nd.	...	College Prize	...	...	£20.
	3rd.	...	Ditto	...	...	£10.
<i>Summer.</i>	1st.	...	College Prize	...	...	£15.
	2nd.	...	Ditto	...	...	£10.

### THIRD YEAR.

Second Tenure of the Musgrove Scholarship (if holder obtains 1st Class in this examination) ... £38 10s.

<i>Winter.</i>	1st.	...	College Prize	...	...	£20.
	2nd.	...	Ditto	...	...	£15.
	3rd.	...	Ditto	...	...	£10.
<i>Summer.</i>	1st.	...	College Prize	...	...	£15.
	2nd.	...	Ditto	...	...	£10.

Students of each year are classed according to their respective merits in the examinations, and those in the *first* class in each year receive Certificates of Honour, and a preference in the selection for Hospital Appointments.

Free Scholarships are given to distinguished Pupils of Merchant Taylors and City of London Schools, and Epsom College.

In addition there are awarded—

THE CHESELDEN MEDAL, *Annually.*

THE MEAD MEDAL, *do.*

THE SOLLY MEDAL AND PRIZE, *Biennially.* (1898.)

THE BEANEY SCHOLARSHIP, *do.* (1898.)

THE SUTTON SAMS MEMORIAL PRIZE, *Biennially* (1898.)

THE GRAINGER TESTIMONIAL PRIZE, *Annually.*

THE TREASURER'S GOLD MEDAL, *do.*

THE BRISTOWE MEDAL, *do.*

Intending Competitors, especially those who have spent a part of their curriculum elsewhere, should apply to the Medical Secretary for detailed regulations.



The CHESELDEN MEDAL, founded by the late GEORGE VAUGHAN, Esq., is annually awarded to the Fifth Year's Student who most distinguishes himself in respect of a Special Practical Examination in Surgery and Surgical Anatomy.

The MEAD MEDAL, founded by Mr. and Mrs. NEWMAN SMITH, is awarded annually to a Fifth Year's Student, in respect of a Special Practical Examination in Medicine, Pathology and Hygiene.

The SOLLY MEDAL, together with a Prize in Money, will be awarded biennially. Those Students are eligible to compete who shall be of from three to six years' standing. The award is made for the best series of Reports of Surgical cases coming under the Student's personal observation in the Wards, not, however, to exceed ten in number.

The BRISTOWE MEDAL will be awarded annually in respect of a special Practical Examination in Pathology and Morbid Anatomy.

The GRAINGER TESTIMONIAL PRIZE, of the value of Fifteen Pounds, is awarded annually for work in Anatomy and Physiology. The conditions of competition for this Prize have recently been altered, and can be learnt from the Medical Secretary.

The SUTTON SAMS MEMORIAL PRIZE, awarded biennially for the best series of Reports of Cases in Obstetric Medicine, including Midwifery and the Diseases of Women.

The TREASURER'S GOLD MEDAL for General Proficiency and Good Conduct, is awarded at the end of the 5th Winter Session to the Student who has passed through his pupilage in St. Thomas's Hospital in the most meritorious manner (printed regulations are posted in the Library).

#### APPOINTMENTS.\*

A RESIDENT ASSISTANT PHYSICIAN and a RESIDENT ASSISTANT SURGEON, at a salary of £100 per annum each, are from time to time appointed. The appointments are annual, but the tenure of office may be renewed for a term not exceeding three years.

TWO HOSPITAL REGISTRARS, at an annual Salary of £100 each, are appointed in each year. They are eligible for annual re-appointment, but may not hold office for more than three years. Preference will be given to Gentlemen who have been distinguished for merit, and have completed their studies in the School. The payment of the Registrars is subject to the presentation of a Report upon the Practice of the Hospital, and to such Report being regarded as satisfactory by the Medical Officers to whom it shall have been referred.

AN OBSTETRIC TUTOR AND REGISTRAR is appointed each year, at an annual salary of £50. He is eligible for annual re-appointment, but may not hold office for more than three years consecutively. The holder of the office takes part in the tutorial instruction of students, under the direction of the Obstetric Physician.

**House Appointments, open to Students who have obtained their diplomas.**  
(*The duties of these offices commence on the first Tuesday in March, June, September, and December.*)

FOUR HOUSE PHYSICIANS, FOUR HOUSE SURGEONS, and FOUR ASSISTANT HOUSE SURGEONS, are selected every three months. The Assistant House Surgeons are non-resident, but the other Officers are provided with Rooms and Commons in the Hospital, free of expense.

A SENIOR and a JUNIOR OBSTETRIC HOUSE PHYSICIAN are selected every three months. The former is provided with Rooms and Commons in the Hospital, free of expense. The latter is provided with Commons, and must live near the Hospital.

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\* All these Appointments are open to Students without extra payment.

TWO OPTHALMIC HOUSE SURGEONS, Senior and Junior, are appointed for six months, one of whom receives a Salary at the rate of £50 per annum, and the other is provided with Commons. They must live near the Hospital.

CLINICAL ASSISTANTS in the Departments for Diseases of the Throat, Skin, and Ear, and in the Electrical Department, are appointed every three months.

In the Special Departments preference is given to those who have worked in a satisfactory manner therein as Clinical Clerks and Dressers.

#### Appointments for Un-qualified Students.

CLINICAL CLERKS and DRESSERS to In-patients are selected to the number of at least 100 each year, from amongst the most eligible pupils. The DRESSER on Accident Duty is provided with a Room and Commons in the Hospital. CLINICAL CLERKS and DRESSERS for the Out-patients are also appointed, to the number of at least 80 to 100 each year; applicants are required to have passed the 2nd examination of the Conjoint Board, or an equivalent examination, and to have attended a course of instruction in Elementary Clinical Medicine (p. 25). (*The Duties commence on the first Tuesday in January, April, July, and October.*)

OBSTETRIC CLERKS are appointed, in rotation, from a list of Students who have entered their names for the purpose, have attended Lectures on Midwifery and a course of Elementary Practical Obstetrics, and have passed the "Second Conjoint," or an equivalent Examination. Each Clerk holds office for three weeks, and Special Certificates are awarded to those Gentlemen who have satisfactorily attended Sixty Maternity cases. About 50 Obstetric Clerks are appointed yearly.

ASSISTANTS TO THE TEACHERS OF PRACTICAL AND MANIPULATIVE SURGERY are appointed for the Winter and Summer Sessions.

ASSISTANTS TO THE LECTURER ON MATERIA MEDICA are appointed for the Summer Session.

Students are appointed to act as ASSISTANTS in the CLINICAL LABORATORY and to the DEMONSTRATORS of MORBID HISTOLOGY and of MORBID ANATOMY.

ASSISTANTS IN THE CHEMICAL DEPARTMENT are selected from those who have passed the PREL. SCI. UNIV. LOND. or who are similarly qualified.

ASSISTANTS IN THE PHYSIOLOGICAL LABORATORY are selected from Students who have completed their Second Winter Session.

ANATOMICAL REGISTRARS and PROSECTORS are appointed in the early part of the Winter Session, also ASSISTANTS TO THE LECTURER ON ELEMENTARY BIOLOGY.

#### REGULATIONS FOR THE EXAMINATION AND CLASSIFICATION OF THE STUDENTS AT THE MEDICAL SCHOOL.

1. In accordance with the Regulations of the Qualifying Bodies, Students must attend the Class Examinations in the subjects for which they have to be certified, and show by their answers to the questions that they have paid proper attention to the Lectures, otherwise the signature to their Schedules may be withheld.

2. There shall be held at least two Examinations in each Winter and one in each Summer Session in each subject on which attendance is required during that Session, and the marks obtained in these Examinations shall be the basis for the Classification of Students and the Award of Prizes for each Session respectively. Provided that any extra Examination in the course of the Session, in any subject, be not allowed to interfere with the ordinary Lectures in other subjects.

3. The number of marks allotted to each subject in the following Schedule is not to be exceeded in case the number of Examinations held during the Session be more than two, but must be distributed amongst the several Examinations.

## 1st YEAR'S SUBJECTS.

WINTER ...	Anatomy ... ..	500
	Practical Anatomy ... ..	300
	Physiology ... ..	300
	Elementary Biology ... ..	300
	Chemistry and Practical	
	Chemistry ... ..	600
	Total ... ..	2000
SUMMER ...	Chemistry and Practical	
	Chemistry ... ..	300
	Practical Pharmacy ... ..	200
	Practical Physiology ... ..	300
	Total ... ..	800

## 2nd YEAR'S SUBJECTS.

WINTER ...	Anatomy ... ..	500
	Practical Anatomy ... ..	300
	Physiology ... ..	600
	Practical Physiology ... ..	200
	Total ... ..	1600
SUMMER ...	Midwifery ... ..	500
	Practical Surgery ... ..	200
	Total ... ..	700

## 3rd YEAR'S SUBJECTS.

WINTER ...	Medicine ... ..	650
	Surgery ... ..	650
	Practical Surgery ... ..	300
	Total ... ..	1600

SUMMER ...	Forensic Medicine ... ..	500
	Pathological Anatomy ... ..	350
	Pharmacology and	
	Therapeutics ... ..	250
	Mental Diseases and	
	Public Health ... ..	200
	Total ... ..	1000

4. Students must obtain at least one-third of the total number of marks in each subject, and not less than two-thirds of the total number allotted to all the subjects collectively, to be placed in the 1st Class.

Those who have obtained one-third of the total number of marks allotted to all the subjects collectively are placed in the 2nd Class.

The names of those who do not obtain either a 1st or 2nd Class position are not published, but a General List showing the exact position of each Student at every Examination is kept by the Secretary, from whom any Student can learn his own position, but no Lecturer shall make known to Students the number of marks obtained by any Student in any subject.

5. The Prizes shall be awarded to the Students holding the 1st, 2nd, and 3rd positions in the 1st Class of each Winter Session, and to those holding the 1st and 2nd positions of the 1st Class in each Summer Session.

6. The number of marks allotted to the Examinations for the MEAD and CHESELDEN Medals shall be 600 each.

7. In awarding the TREASURER'S Medal the number of marks obtained at the Sessional Examinations and in the MEAD and CHESELDEN Examinations shall be counted, provided that, as regards the Examination for the Medals, two-thirds of the maximum marks be obtained, but those obtained in the Entrance Scholarship Competition shall not be included.

8. The Authorities reserve the right of withholding any prize, if no competitor of sufficient merit present himself.

## Distribution of Prizes for the Past Sessions.

### SUMMER SESSION, 1896.

#### SECOND YEAR'S STUDENTS.

H. T. D. ACLAND, <i>Hyde Park Gardens</i> ... ..	{	College Prize, £15,
		and Certificate of Honour.
H. H. R. CLARKE, <i>Wimbledon</i> ... ..	{	College Prize, £10,
		and Certificate of Honour.

#### THIRD YEAR'S STUDENTS.

H. E. HEWITT, <i>Croydon</i> ... ..	{	College Prize, £15,
		and Certificate of Honour.
R. W. C. PIERCE, <i>Llandudno</i> ... ..	{	College Prize, £10,
		and Certificate of Honour.

## WINTER SESSION, 1896-7.

## ENTRANCE SCIENCE SCHOLARSHIPS.

A. B. LINDSEY, <i>Finsbury Park Road</i> ... ..	{	First Scholarship, £150, and Certificate of Honour.
R. E. ROBERTS, <i>Carnarvon</i> ... ..	{	Scholarship, £60, and Certificate of Honour.
C. N. SEARS, <i>West Dulwich</i> ... ..	{	Exhibition, £20, and Certificate of Honour.

## UNIVERSITY SCHOLARSHIP.

R. J. HORTON-SMITH, <i>Lancaster Gate</i> ... ..	{	Scholarship, £50, and Certificate of Honour.
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## FIRST YEAR'S STUDENTS.

C. N. SEARS, <i>West Norwood</i> ... ..	{	The Wm. Tite Scholarship, £27 10s., and Certificate of Honour.
A. B. LINDSEY, <i>Finsbury Park Road</i> ... ..	{	College Prize, £20, and Certificate of Honour.

## SECOND YEAR'S STUDENTS.

C. F. SELOUS, <i>West Norwood</i> ... ..	{	The Musgrove Scholarship, £38 10s., and Certificate of Honour.
F. B. SKERRETT, <i>Newcastle, Staffs.</i> ... ..	{	College Prize, £20, and Certificate of Honour.

## THIRD YEAR'S STUDENTS.

R. J. HORTON-SMITH, <i>Lancaster Gate</i> ... ..	{	College Prize, £20, and Certificate of Honour.
J. GAFF, <i>Kennington Road</i> ... ..	{	College Prize, £15, and 2nd Tenure of Peacock Scholarship, and Certificate of Honour.
H. T. D. ACLAND, <i>Hyde Park Gardens</i> ... ..	{	College Prize, £10, and Certificate of Honour.

## PRACTICAL MEDICINE

H. C. JONAS, <i>Duxford, Cambridge</i> ... ..	{	The Mead Medal, founded by Mr. and Mrs. NEWMAN SMITH.
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## SURGERY AND SURGICAL ANATOMY.

A. C. ROBINSON ... ..	{	The Cheselden Medal, founded by the late GEORGE VAUGHAN, Esq.
F. L. A. GREAVES ... ..		Certificate of Honour.

## PATHOLOGY AND MORBID ANATOMY.

C. G. SELIGMANN, <i>Maida Vale</i> ... ..	The Bristowe Medal.
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## GRAINGER TESTIMONIAL PRIZE.

W. McDougall, <i>Didsbury, Manchester</i> ... ..	Prize, £15.
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## FOR GENERAL PROFICIENCY AND GOOD CONDUCT.

A. W. SIKES, <i>Garrycloyne, Blarney</i> ... ..	The Treasurer's Gold Medal.
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## CERTIFICATES OF HONOUR.

### HOUSE PHYSICIANS.

W. H. J. PATERSON	A. W. SIKES
E. H. T. NASH	J. P. SCATCHARD
G. J. CONFORD	J. S. FAIRBAIRN
L. W. RICHARDS	E. STAINER

### HOUSE SURGEONS.

B. DYBALL	W. D. FRAZER	R. G. STRANGE
P. W. KENT	A. J. MARTINEAU	G. E. O. TAYLOR
J. SMITH	F. H. GERVIS	

### ASSISTANT HOUSE SURGEONS.

A. J. MARTINEAU	G. E. O. TAYLOR	L. GILBERT
F. H. GERVIS	W. H. J. PATERSON	S. N. BABINGTON
R. G. STRANGE	A. W. TUKE	

### OBSTETRIC HOUSE PHYSICIANS.

<i>Senior</i> —C. W. GRANT WILSON	<i>Junior</i> —P. L. BLABER
P. L. BLABER	E. L. COLLIS
E. L. COLLIS	A. L. HOME
A. L. HOME	J. B. TOMBLESON

### OPHTHALMIC HOUSE SURGEONS.

P. S. HICHENS	E. HOPKINSON
---------------	--------------

### CLINICAL ASSISTANTS IN THE SPECIAL DEPARTMENTS.

Throat	Skin	Ear	Electrical
H. G. TOOMBS	A. H. P. DAWNAY	C. E. DURRANT	W. D. KNOCKER
C. E. JONES	R. LAWSON	H. J. MACEVOY	C. G. SELIGMANN
L. W. RICHARDS			F. W. BINCKES

## CERTIFICATES OF PROFICIENCY.

### ANATOMICAL REGISTRARS.

H. T. D. ACLAND	H. H. R. CLARKE
-----------------	-----------------

### PROSECTORS.

H. R. BATEMAN	A. D. JAMESON	S. HUNT
W. B. FRY	H. H. KIDDLE	H. S. STANNUS

### ASSISTANTS IN THE PHYSIOLOGICAL LABORATORY.

J. GAFF	A. W. JONES
H. T. D. ACLAND	H. H. R. CLARKE

### ASSISTANTS IN THE CHEMICAL LABORATORY.

J. GAFF	H. R. BEALE
---------	-------------

### ASSISTANTS IN THE PATHOLOGICAL LABORATORY.

E. F. BUZZARD	E. E. NICHOLL	H. D. SINGER
H. E. HEWITT	C. A. REYNOLDS	G. B. THWAITES

### ASSISTANTS IN THE BIOLOGICAL LABORATORY.

A. D. JAMESON	H. J. DE BRENT
---------------	----------------

### ASSISTANTS TO THE LECTURER ON MATERIA MEDICA.

W. J. E. DAVIES	E. H. T. NASH
-----------------	---------------

### ASSISTANTS TO THE TEACHERS OF PRACTICAL SURGERY.

S. N. BABINGTON	L. GILBERT	J. P. SCATCHARD
J. H. DE VILLIERS	G. D. HOWLETT	S. D. TURNER

The following Distinctions in the University of London have been obtained by Students of St. Thomas's Hospital during the past year :—

### HONOURS EXAMINATIONS—UNIV. LOND.

First Class in Medicine (M.B.), Mr. E. O. THURSTON.  
 Third Class in Medicine and in Obstetric Medicine (M.B.), Mr. F. B. THORNTON.  
 Third Class in Obstetric Medicine (M.B.), Mr. W. E. DIXON.  
 Exhibition and Gold Medal in Organic Chemistry (Intermed. M.B.), Mr. J. GAFF.  
 Second Class in Inorganic Chemistry and in Zoology (Intermed. Sc. and Prel. Sci.),  
 Mr. A. B. LINDSEY.



## FEES FOR ATTENDANCE ON THE LECTURES

AND ON THE

## PRACTICE OF THE HOSPITAL.

## COMPOSITION FEES.

The Composition Fee\* to Hospital Practice and Lectures may be paid in the following ways:

- 1st. One Hundred and Fifty Pounds on entrance in one sum;
- 2nd. One Hundred and Fifty-seven Pounds Ten Shillings in instalments;
- (a) By two payments, £85 on entrance, and £72 10s. at the beginning of the second year;
- (b) By three payments, £75 at the beginning of the first year, £50 at the beginning of the second year, and £32 10s. at the beginning of the third year;
- (c) By four payments, £65 at the beginning of the first year, £50 at the beginning of the second year, £30 at the beginning of the third year, and £12 10s. at the beginning of the fourth year.

Gentlemen entering at St. Thomas's for Lectures and Hospital Practice of the second and subsequent years pay £130 on entrance, or three instalments of £52 10s., £42, and £42 (see pages 18 and 19). Students entering for Lectures and Hospital Practice of third and subsequent years (see page 19) pay a composition fee of £80, or £52 10s. on entrance, and £31 10s. one year subsequently.

The Fee for attendance on the *general* subjects required of Students in Dental Surgery, is for the two years, £65, or by instalments, £55 for the first year, and £15 for the second year. If certificates for *Dental* practice are also required, the special fee for that subject (page 37) has to be paid.

[N.B.—It should be understood that although the Composition Fees are intended to cover unlimited attendance on Lectures and Hospital Practice, yet if a student fail to pass the several professional examinations within periods deemed reasonable by the School authorities, he may be required to pay additional fees for attendance at practical Courses and Tutorial Classes, or his rights as a Student may be suspended or determined at any time by the School Committee, with the approval of the Treasurer.]

Legally qualified Medical Practitioners are admitted to the Hospital practice, and to the Lectures and Library, on payment of a fee of £15 15s. for unlimited attendance; but are not entitled to receive certificates for such attendance without payment for the special certificates required (see p. 37).

\* Students who have commenced the study of the Profession otherwise than by attendance at a Medical School will be considered to be first year's Students, on joining the Medical School, but a deduction from the Composition Fee will be allowed in such cases.

NOTE.—Cheques may be made payable to the Medical Secretary, and crossed "London and County Bank, Lambeth."

The Courses may be attended separately on the following terms, which entitle to Certificates for such Attendances.

*For the Medical and Surgical Practice, including Clinical Lectures and the Special Departments.*

Three months ... ..	£21.	Twelve months...	£36 15s.
Six months ... ..	£26 5s.	Unlimited ... ..	£73 10s.

The Practice of the Medical or Surgical Wards, or any one of the Special Departments, may be attended separately.

*Medical or Surgical. Each Special Department.*

Three months ... ..	£15 15s.	...	£5 5s.
Six months ... ..	£21.	...	£10 10s.
Twelve months ... ..	£26 5s.	...	£15 15s.

*Lectures and Demonstrations.*

Anatomy, Physiology ... ..	each	£10 10s.
Practical Anatomy (twelve months), Practical Physiology, including Histology ... ..	each	£10 10s.
Medicine, Surgery, Chemistry ... ..	"	£7 7s.
Midwifery ... ..	"	£6 6s.
Pharmacology and Therapeutics, Physics, Forensic Medicine each	"	£5 5s.
Pathology, including Pathological Histology ... ..	"	£8 8s.
Diseases of Women, Public Health, Insanity, Diseases of the Eye ... ..	each	£3 3s.
Practical Medicine, Practical Obstetrics, Laryngology ... ..	"	£3 3s.
Practical Surgery, Practical Chemistry, Elementary Biology ... ..	"	£6 6s.
Demonstrations in Post-Mortem room (twelve months) ... ..	"	£10 10s.

NOTE.—A small charge for materials is made for all Practical Courses taken separately.

### SPECIAL COURSES (not included in the Composition Fee) and EXTRA EXPENSES.

Comparative Anatomy ... ..	£2 2s.
Botany ... ..	£3 3s.
Operative Surgery ... ..	£5 5s.
Ditto of Eye ... ..	£2 2s.
Advanced Anatomy, Advanced Physiology ... ..	each £6 6s.
Public Health—Six months' Laboratory Instruction for the Diploma ... ..	£21.
Ditto Short Course ... ..	£6 6s.
Practical Bacteriology ... ..	£1 1s.
Vaccination ... ..	£1 1s.
Practical Instruction in Pharmacy ... ..	£3 3s.
Attendance at a Fever Hospital of the Metropolitan Asylums Board ... ..	£3 3s.
Attendance at a recognised Lunatic Asylum ... ..	£3 3s.

Students who pay a Composition Fee are now supplied with chemicals and materials for **one course** of Practical Chemistry, Practical Physiology, and Elementary Biology without extra charge, but there are certain instruments and materials required during the course of study, as follows, viz. :

Those attending Elementary Biology, Practical Physiology and Physiological Demonstrations must provide themselves with Microscopes. Dissecting Instruments are required for the Elementary Biology Course.

Students Dissecting pay for the "parts" they dissect at fixed rates, which are notified in the Library.

Each Clinical Clerk must provide himself with a Stethoscope and Registering Clinical Thermometer. Each Dresser is required to have a Registering Clinical Thermometer, a Pocket Case of Instruments, and a Case of Silver or Plated Catheters.

# UNIVERSITY OF LONDON.

## Preliminary Scientific and Intermediate M.B. Classes.

### PRELIMINARY SCIENTIFIC EXAMINATION.

Special instruction in the subjects required for this Examination is given in the form of (a) Lectures and (b) Classes, from October to July.

	Mon.	Tues.	Wed.	Thu.	Fri.	Sat.
Botany.						
A. W. BENNETT, M.A. { Lectures (Summer)	—	10.0	10.0	—	—	—
{ Classes (Winter & Summer)	—	—	11.0	—	—	—
Chemistry.						
W. R. DUNSTAN, M.A., { Lectures (Winter)	—	—	12.0	—	12.0	—
{ Classes (Summer)	—	—	—	12.0	—	—
F.R.S. { Practical (Winter)	—	2.0	—	—	—	10.30 from Jan
{ „ (Summer)	11.0	2.0	—	—	12.0	9.30
Physics.						
W. R. DUNSTAN, M.A., { Lectures	2.0	—	9.30	—	—	10.30
{ „ and	from Jan	—	—	—	—	Oct.
H. R. LESUEUR, B.Sc. { Practical Work } Winter	—	—	9.0	9.0	—	Nov.
{ „ } Summer	—	—	—	& 2.0	—	Dec.
Zoology.						
F.G. PARSONS, F.R.C.S. { Classes (Winter)	—	—	1.30	—	—	—
{ „ (Summer)	9.30	—	—	10.30	—	—
						Laboratory open daily

N.B.—A Microscope and simple Dissecting Apparatus must be provided by each Member of the Class, and Two Guineas are charged for materials.

Fee, inclusive of Practical Chemistry ... .. *Sixteen Guineas.*

Fee for any single subject ... .. *Five Guineas.*

Subsequent Courses, half Fee, if recommended by the respective Teachers.

In the Practical Classes of Botany and Zoology, each Student has the opportunity of dissecting the chief types.

### INTERMEDIATE EXAMINATION IN MEDICINE.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat
Anatomy.						
G. H. MAKINS, { Jan. to Mar.	—	9.30	—	9.30	—	—
F.R.C.S., and { May to July	—	Four	times a	week.	—	—
H. B. ROBINSON, M.S. {						
Physiology & Histology { Oct. to Mar.	2—4	—	2—4	—	—	—
T. G. BRODIE, M.D. { May to July	—	—	—	—	11—1	—
Lond. {						
Organic Chemistry. { Jan. to Mar.	—	2.0	—	2.0	2.0	—
W. R. DUNSTAN, { May to July	—	2.0	3.0	2.0	2.0	—
M.A., F.R.S. {						
Materia Medica and { May to July	—	Practical	2.0	Practical	Revision	—
Pharm. Chemistry. {						
E. WHITE, B.Sc. {						

Fee to Students of the Hospital, inclusive of

Organic Analysis and Chemicals ... .. *Nine Guineas.*

To others ditto ... .. *Twelve Guineas.*

Subsequent Courses, half Fee, if recommended by the respective Teachers.

\* Students are strongly advised to attend the lectures in this subject immediately they have passed the Preliminary Scientific Examination, and the lectures, revision classes and practical work in the next year.

NOTE.—Private Classes are held for the Final M.B. Examination.

# St. Thomas's Hospital.

## MEDICAL AND PHYSICAL SOCIETY.

*President, 1897—98.*  
MR. W. H. BATTLE.

*Vice-Presidents.*

DR. ACLAND.  
MR. ANDERSON.  
DR. CULLINGWORTH.  
MR. FOX SYMONS.

MR. LAWFORD.  
DR. MACKENZIE.  
DR. NICHOLSON.

MR. ROBINSON.  
MR. SHATTOCK.  
MR. TUKE.

*Treasurer.*—MR. G. S. SAUNDERS.

*Hon. Secretaries.*

MR. J. F. MCCLEAN.

MR. H. T. D. ACLAND.

*Committee.*

MR. J. P. SCATCHARD.  
MR. C. G. SELIGMANN.  
MR. J. F. MCCLEAN.  
MR. E. A. GATES.

MR. H. T. D. ACLAND.  
MR. H. R. BEALE.  
MR. W. B. FRY.

MR. C. F. SELOUS.  
MR. J. J. ARMITAGE.  
MR. H. J. DE BRENT.

This Society was originated in the early part of the present century by students of the Hospital, and has for its object the reading and discussion of papers on Medicine, Surgery, and subjects of General Interest, the narration of cases, and the exhibition of specimens of Physiological and Pathological interest. The Meetings are held in the Library on alternate Thursdays at 8.30 p.m., and terminate not later than 10 p.m.

Further information can be obtained of the Hon. Secretaries.

## ST. THOMAS'S HOSPITAL REPORTS.

VOL. XXV., NEW SERIES,

EDITED BY

H. W. G. MACKENZIE, M.A., M.D., Cantab, and  
G. H. MAKINS, F.R.C.S.

*Will be Published in due Course.*

It will contain contributions from Members of the Staff and others, together with the Statistical Reports of the Hospital, by the Medical and Surgical Registrars, to December 31st, 1896.

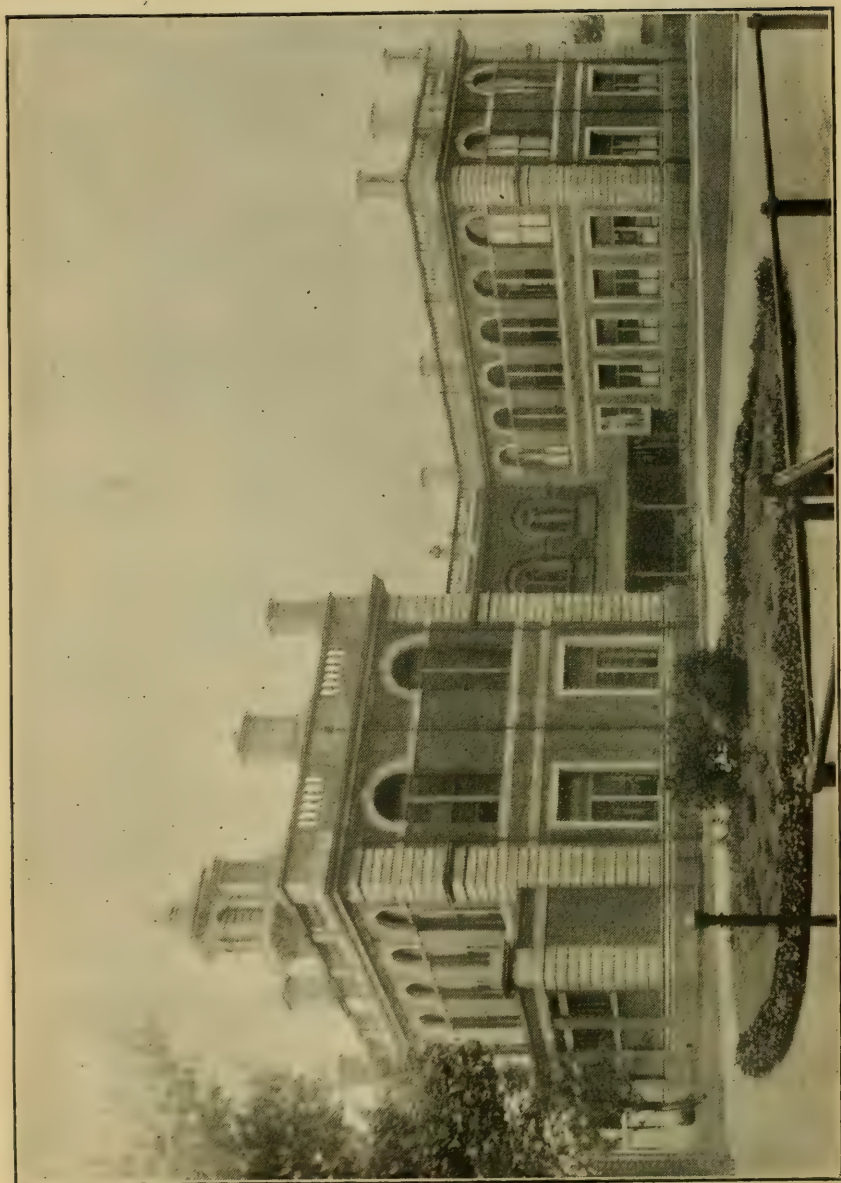
The New Series commenced in 1870, and complete Sets may still be had.

Intending Subscribers are requested to communicate with MR. G. RENDLE, the Secretary of the Medical School, at the Hospital, to whom P.O. Orders on the Westminster Bridge Office are to be made payable.

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MEDICAL SCHOOL, NORTH VIEW.



# OCTOBER, 1897.

|    |    |                                               |
|----|----|-----------------------------------------------|
| 1  | F  |                                               |
| 2  | S  | Distribution of Prizes, 3 P.M. Annual Dinner. |
| 3  | S  | Sixteenth Sunday after Trinity.               |
| 4  | M  |                                               |
| 5  | Tu | Clinical Clerks and Dressers commence duty.   |
| 6  | W  |                                               |
| 7  | Th |                                               |
| 8  | F  | Meeting of Library Committee.                 |
| 9  | S  |                                               |
| 10 | S  | Seventeenth Sunday after Trinity.             |
| 11 | M  |                                               |
| 12 | Tu |                                               |
| 13 | W  |                                               |
| 14 | Th |                                               |
| 15 | F  |                                               |
| 16 | S  |                                               |
| 17 | S  | Eighteenth Sunday after Trinity.              |
| 18 | M  | St. Luke. Univ. Lond. B.Sc. Exam.             |
| 19 | Tu |                                               |
| 20 | W  |                                               |
| 21 | Th |                                               |
| 22 | F  |                                               |
| 23 | S  |                                               |
| 24 | S  | Nineteenth Sunday after Trinity.              |
| 25 | M  | Univ. Lond. M.B. Exam.                        |
| 26 | Tu |                                               |
| 27 | W  |                                               |
| 28 | Th | St. Simon and St. Jude.                       |
| 29 | F  |                                               |
| 30 | S  |                                               |
| 31 | S  | Twentieth Sunday after Trinity.               |

*The Registration and Museum Committees meet during this month.*

*The Primary Examination of the Society of Apothecaries is held Quarterly, in the months of October, January, April, and July. The Final is held monthly; the Surgical part commences on the second Wednesday, and the Medical on the Monday following.*

*First, Second, and Third Examinations of the Examining Board in England are held this month.*

# NOVEMBER, 1897.

|    |    |                                                                                          |
|----|----|------------------------------------------------------------------------------------------|
|    |    | <i>Notice</i> —30th, last day for applications for Medical and [Surgical Registrarships. |
| 1  | M  | All Saints. Entry for M.D. and M.S. Exams. Univ. Lond.                                   |
| 2  | Tu | All Souls.                                                                               |
| 3  | W  | Last day for applications for House Offices, &c.*                                        |
| 4  | Th |                                                                                          |
| 5  | F  |                                                                                          |
| 6  | S  |                                                                                          |
| 7  | S  | Twenty-first Sunday after Trinity.                                                       |
| 8  | M  |                                                                                          |
| 9  | Tu | Prince of Wales born, 1841.                                                              |
| 10 | W  | Meeting to appoint House Officers, &c.                                                   |
| 11 | Th |                                                                                          |
| 12 | F  |                                                                                          |
| 13 | S  |                                                                                          |
| 14 | S  | Twenty-second Sunday after Trinity.                                                      |
| 15 | M  |                                                                                          |
| 16 | Tu | Univ. Lond. M.B. Pass List published. Last day for [Entry for B.S. Exam., Univ. Lond.    |
| 17 | W  | Univ. Lond. M.B. Honours Exam.                                                           |
| 18 | Th |                                                                                          |
| 19 | F  |                                                                                          |
| 20 | S  | Univ. Lond. B.Sc. Pass List published.                                                   |
| 21 | S  | Twenty-third Sunday after Trinity.                                                       |
| 22 | M  |                                                                                          |
| 23 | Tu |                                                                                          |
| 24 | W  |                                                                                          |
| 25 | Th |                                                                                          |
| 26 | F  |                                                                                          |
| 27 | S  |                                                                                          |
| 28 | S  | Advent Sunday.                                                                           |
| 29 | M  |                                                                                          |
| 30 | Tu | St. Andrew. Last day for applications for Medical and [Surgical Registrarships.          |

*Examinations for the Fellowship of the Royal College of Surgeons of England held this month.*

\* *Applications for these appointments to be made to the Medical Secretary, by letter, stating the Candidate's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity Cases attended.*

# DECEMBER, 1897.

|    |    |                                                                         |
|----|----|-------------------------------------------------------------------------|
| 1  | W  | Last day for applications for Clinical Clerkships and<br>[Dresserships. |
| 2  | TH |                                                                         |
| 3  | F  |                                                                         |
| 4  | S  |                                                                         |
| 5  | S  | Second Sunday in Advent.                                                |
| 6  | M  | Univ. Lond. M.D. and M.S. Exam. [duty.                                  |
| 7  | TU | Univ. Lond. B.S. Exam. House Officers, &c., commence                    |
| 8  | W  | Meeting to appoint Clinical Clerks and Dressers.                        |
| 9  | TH |                                                                         |
| 10 | F  |                                                                         |
| 11 | S  |                                                                         |
| 12 | S  |                                                                         |
| 13 | M  | Third Sunday in Advent.                                                 |
| 14 | TU | Last day for Entry for Matriculation Univ. Lond.                        |
| 15 | W  |                                                                         |
| 16 | TH |                                                                         |
| 17 | F  |                                                                         |
| 18 | S  |                                                                         |
| 19 | S  | Fourth Sunday in Advent.                                                |
| 20 | M  | Last day for Entry for Prel. Sci. and Int. Med. Exam. Univ.             |
| 21 | TU | St. Thomas. [Lond.                                                      |
| 22 | W  | Univ. Lond. M.D. List published.                                        |
| 23 | TH |                                                                         |
| 24 | F  |                                                                         |
| 25 | S  |                                                                         |
| 26 | S  |                                                                         |
| 27 | M  | CHRISTMAS DAY.                                                          |
| 28 | TU | First Sunday after Christmas. Saint Stephen.                            |
| 29 | W  | Saint John, Evang.                                                      |
| 30 | TH | Holy Innocents.                                                         |
| 31 | F  |                                                                         |

*University of Cambridge First, Second, and Third M.B. Examinations are held this month.*

# JANUARY, 1898.

|    |    |                                                          |
|----|----|----------------------------------------------------------|
| 1  | S  | Circumcision.                                            |
| 2  | S  | Second Sunday after Christmas.                           |
| 3  | M  |                                                          |
| 4  | Tu | Clinical Clerks and Dressers commence duty.              |
| 5  | W  |                                                          |
| 6  | Th | Epiphany.                                                |
| 7  | F  | Meeting of Library Committee.                            |
| 8  | S  |                                                          |
| 9  | S  | First Sunday after Epiphany.                             |
| 10 | M  | Univ. Lond. Matriculation Examination.                   |
| 11 | Tu |                                                          |
| 12 | W  |                                                          |
| 13 | Th |                                                          |
| 14 | F  |                                                          |
| 15 | S  |                                                          |
| 16 | S  | Second Sunday after Epiphany.                            |
| 17 | M  | Univ. Lond. Prelim. Scientific (M.B.) Exam. and Intermd. |
| 18 | Tu | [Exam. in Medicine.                                      |
| 19 | W  |                                                          |
| 20 | Th |                                                          |
| 21 | F  |                                                          |
| 22 | S  |                                                          |
| 23 | S  | Third Sunday after Epiphany                              |
| 24 | M  |                                                          |
| 25 | Tu | Conversion of St. Paul.                                  |
| 26 | W  |                                                          |
| 27 | Th |                                                          |
| 28 | F  |                                                          |
| 29 | S  |                                                          |
| 30 | S  | Fourth Sunday after Epiphany.                            |
| 31 | M  |                                                          |

*First, Second, and Third Examinations of the Examining Board in England are held this month.*

*Examinations for Diploma in Public Health of the Royal Colleges of Physicians and Surgeons held this month.*

*The Registration and Museum Committees meet during this month.*

# FEBRUARY, 1898.

|    |    |                                                                                           |
|----|----|-------------------------------------------------------------------------------------------|
| 1  | TU |                                                                                           |
| 2  | W  | Last day for applications for House Offices, &c.*                                         |
| 3  | TH |                                                                                           |
| 4  | F  |                                                                                           |
| 5  | S  |                                                                                           |
| 6  | S  | Septuagesima Sunday.                                                                      |
| 7  | M  |                                                                                           |
| 8  | TU |                                                                                           |
| 9  | W  | Univ. Lond. Prel. Sci. (M. B.) List published. Meeting to<br>[appoint House Officers, &c. |
| 10 | TH | Queen Victoria married, 1840.                                                             |
| 11 | F  |                                                                                           |
| 12 | S  |                                                                                           |
| 13 | S  | Sexagesima Sunday.                                                                        |
| 14 | M  |                                                                                           |
| 15 | TU |                                                                                           |
| 16 | W  | Univ. Lond. Matric. and Int. Med. Pass Lists published.                                   |
| 17 | TH |                                                                                           |
| 18 | F  |                                                                                           |
| 19 | S  |                                                                                           |
| 20 | S  | Quinquagesima Sunday.                                                                     |
| 21 | M  |                                                                                           |
| 22 | TU |                                                                                           |
| 23 | W  | Ash Wednesday.                                                                            |
| 24 | TH | St. Matthias.                                                                             |
| 25 | F  |                                                                                           |
| 26 | S  |                                                                                           |
| 27 | S  | First Sunday in Lent.                                                                     |
| 28 | M  |                                                                                           |

\* Applications for these appointments to be made to the Medical Secretary, by letter, stating the Candidate's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity cases attended.



# MARCH, 1898.

|    |    |                                                                                         |
|----|----|-----------------------------------------------------------------------------------------|
| 1  | TU | House Officers, &c., commence duty.                                                     |
| 2  | W  | Last day for applications for Clinical Clerkships and<br>[Dresserships.]                |
| 3  | TH |                                                                                         |
| 4  | F  |                                                                                         |
| 5  | S  |                                                                                         |
| 6  | S  | Second Sunday in Lent.                                                                  |
| 7  | M  |                                                                                         |
| 8  | TU |                                                                                         |
| 9  | W  | Meeting to appoint Clinical Clerks and Dressers.                                        |
| 10 | TH | Prince of Wales married, 1863.                                                          |
| 11 | F  |                                                                                         |
| 12 | S  |                                                                                         |
| 13 | S  | Third Sunday in Lent.                                                                   |
| 14 | M  |                                                                                         |
| 15 | TU |                                                                                         |
| 16 | W  |                                                                                         |
| 17 | TH |                                                                                         |
| 18 | F  |                                                                                         |
| 19 | S  |                                                                                         |
| 20 | S  | Fourth Sunday in Lent.                                                                  |
| 21 | M  |                                                                                         |
| 22 | TU |                                                                                         |
| 23 | W  |                                                                                         |
| 24 | TH |                                                                                         |
| 25 | F  | Annunciation. LADY DAY.                                                                 |
| 26 | S  |                                                                                         |
| 27 | S  | Fifth Sunday in Lent.                                                                   |
| 28 | M  |                                                                                         |
| 29 | TU |                                                                                         |
| 30 | W  |                                                                                         |
| 31 | TH | Last day for Reports for Solly Medal (1898). Registrar's<br>[Report for last year due.] |

# APRIL, 1898.

|    |    |                                               |
|----|----|-----------------------------------------------|
| 1  | F  |                                               |
| 2  | S  |                                               |
| 3  | S  | Palm Sunday.                                  |
| 4  | M  | Last day for Entry for M.B. Exam. Univ. Lond. |
| 5  | TU | Clinical Clerks and Dressers commence duty.   |
| 6  | W  |                                               |
| 7  | TH |                                               |
| 8  | F  | Good Friday.                                  |
| 9  | S  |                                               |
| 10 | S  | Easter Sunday.                                |
| 11 | M  | Bank Holiday.                                 |
| 12 | TU |                                               |
| 13 | W  |                                               |
| 14 | TH |                                               |
| 15 | F  |                                               |
| 16 | S  |                                               |
| 17 | S  | First Sunday after Easter. Low Sunday.        |
| 18 | M  |                                               |
| 19 | TU |                                               |
| 20 | W  |                                               |
| 21 | TH |                                               |
| 22 | F  |                                               |
| 23 | S  |                                               |
| 24 | S  | Second Sunday after Easter.                   |
| 25 | M  | St. Mark.                                     |
| 26 | TU |                                               |
| 27 | W  |                                               |
| 28 | TH |                                               |
| 29 | F  |                                               |
| 30 | S  |                                               |

*Univ. Camb. Third M.B. and First, Second, and Third Examinations of the Examining Board in England are held this month.*

*The Examinations for the Mead and Cheselden Medals take place this month.*

*The Annual Inspection of the Museum and meeting of Museum Committee take place during this month.*

*The Registration Committee meets during this month.*

# MAY, 1898.

|    |    |                                                           |
|----|----|-----------------------------------------------------------|
| 1  | S  | Third Sunday after Easter. St. Philip and St. James.      |
| 2  | M  | Univ. Lond. M.B. Exam.                                    |
| 3  | Tu |                                                           |
| 4  | W  | Last day for application for House Offices, &c.*          |
| 5  | Th |                                                           |
| 6  | F  |                                                           |
| 7  | S  |                                                           |
| 8  | S  | Fourth Sunday after Easter.                               |
| 9  | M  |                                                           |
| 10 | Tu |                                                           |
| 11 | W  | Meeting to appoint House Officers, &c. First Stone of St. |
| 12 | Th | [Thomas's New Hospital laid by H.M. the Queen, 1868.      |
| 13 | F  |                                                           |
| 14 | S  |                                                           |
| 15 | S  | Fifth Sunday after Easter. Rogation Sunday.               |
| 16 | M  | Last day for Entry for Matric. Univ. Lond.                |
| 17 | Tu |                                                           |
| 18 | W  |                                                           |
| 19 | Th | Ascension Day. Holy Thursday.                             |
| 20 | F  |                                                           |
| 21 | S  |                                                           |
| 22 | S  | Sunday after Ascension Day.                               |
| 23 | M  |                                                           |
| 24 | Tu | Univ. Lond. M.B. Pass List published. Queen Victoria      |
| 25 | W  | [born, 1819.                                              |
| 26 | Th |                                                           |
| 27 | F  |                                                           |
| 28 | S  |                                                           |
| 29 | S  | Whit Sunday.                                              |
| 30 | M  | Bank Holiday. No Lectures.                                |
| 31 | Tu |                                                           |

*Examinations for the Fellowship of the Royal College of Surgeons of England held this month.*

*\* Applications for these appointments to be made to the Medical Secretary, by letter, stating the Candidate's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity Cases attended.*

# JUNE, 1898.

|    |    |                                                                                          |
|----|----|------------------------------------------------------------------------------------------|
| 1  | W  | Last day for applications for Clinical Clerkships and<br>[Dresserships.]                 |
| 2  | TH |                                                                                          |
| 3  | F  |                                                                                          |
| 4  | S  |                                                                                          |
| 5  | S  | Trinity Sunday.                                                                          |
| 6  | M  |                                                                                          |
| 7  | TU | House Officers, &c., commence duty.                                                      |
| 8  | W  | Meeting to appoint Clinical Clerks and Dressers.                                         |
| 9  | TH | New Buildings of Medical School opened by H.R.H. the<br>[Duke of Connaught, K.G., 1894.] |
| 10 | F  |                                                                                          |
| 11 | S  | St. Barnabas.                                                                            |
| 12 | S  | First Sunday after Trinity.                                                              |
| 13 | M  |                                                                                          |
| 14 | TU | Univ. Lond. Matric. Exam. Last day for Entry for Int.<br>[Med. Exam. Univ. London.]      |
| 15 | W  |                                                                                          |
| 16 | TH |                                                                                          |
| 17 | F  |                                                                                          |
| 18 | S  |                                                                                          |
| 19 | S  | Second Sunday after Trinity.                                                             |
| 20 | M  |                                                                                          |
| 21 | TU | Queen's Accession. Last day for Entry for Prel. Sci.<br>[(M.B.) Exam. Univ. Lond.]       |
| 22 | W  |                                                                                          |
| 23 | TH | New St. Thomas's Hospital opened by H. M. the Queen,<br>[1871.]                          |
| 24 | F  |                                                                                          |
| 25 | S  | St. John Baptist. Midsummer Day.                                                         |
| 26 | S  | Third Sunday after Trinity.                                                              |
| 27 | M  |                                                                                          |
| 28 | TU | Queen Victoria crowned, 1838.                                                            |
| 29 | W  | St. Peter.                                                                               |
| 30 | TH |                                                                                          |

*The Harveian Oration is delivered at the Royal College of Physicians annually in the month of June.*

*Doctor of Science Examination at London University takes place within the first 21 days of June.*

*Univ. Camb. First and Second M.B. Examinations are held within the first 14 days of June.*

*Examination for the Beaney Scholarship held this month.*

# JULY, 1898.

|    |    |                                                                                                |
|----|----|------------------------------------------------------------------------------------------------|
| 1  | F  | Meeting of Library Committee.                                                                  |
| 2  | S  |                                                                                                |
| 3  | S  | Fourth Sunday after Trinity.                                                                   |
| 4  | M  |                                                                                                |
| 5  | Tu | Clinical Clerks and Dressers commence duty.                                                    |
| 6  | W  | Last day for applications for House Offices. &c., for                                          |
| 7  | Th | [September.*                                                                                   |
| 8  | F  |                                                                                                |
| 9  | S  |                                                                                                |
| 10 | S  | Fifth Sunday after Trinity.                                                                    |
| 11 | M  | Univ. Lond. Int. Med. Exam.                                                                    |
| 12 | Tu |                                                                                                |
| 13 | W  | Meeting to appoint House Officers, &c., for September.<br>[Univ. Lond. Matric. List published. |
| 14 | Th |                                                                                                |
| 15 | F  |                                                                                                |
| 16 | S  |                                                                                                |
| 17 | S  | Sixth Sunday after Trinity.                                                                    |
| 18 | M  | Univ. Lond. Prelim. Scientific (M.B.) Exam.                                                    |
| 19 | Tu |                                                                                                |
| 20 | W  |                                                                                                |
| 21 | Th |                                                                                                |
| 22 | F  |                                                                                                |
| 23 | S  |                                                                                                |
| 24 | S  | Seventh Sunday after Trinity.                                                                  |
| 25 | M  | St. James.                                                                                     |
| 26 | Tu |                                                                                                |
| 27 | W  |                                                                                                |
| 28 | Th |                                                                                                |
| 29 | F  |                                                                                                |
| 30 | S  |                                                                                                |
| 31 | S  | Eighth Sunday after Trinity.                                                                   |

*First, Second, and Third Examinations of the Examining Board in England are held this month.*

*Examinations for Diploma in Public Health of the Royal Colleges of Physicians and Surgeons held this month.*

*The Registration and Museum Committees meet during this month.*

\* *Applications for these appointments to be made to the Medical Secretary, by letter stating the Candidate's qualifications, the offices which he has previously held in the Hospital, and the number of Maternity Cases attended.*



# AUGUST, 1898.

|    |    |                                                            |
|----|----|------------------------------------------------------------|
| 1  | M  | Bank Holiday.                                              |
| 2  | Tu |                                                            |
| 3  | W  |                                                            |
| 4  | Th |                                                            |
| 5  | F  |                                                            |
| 6  | S  |                                                            |
| 7  | S  | Ninth Sunday after Trinity.                                |
| 8  | M  |                                                            |
| 9  | Tu |                                                            |
| 10 | W  | Univ. Lond. Prelim. Sci. & Int. Med. Pass Lists published. |
| 11 | Th |                                                            |
| 12 | F  |                                                            |
| 13 | S  |                                                            |
| 14 | S  | Tenth Sunday after Trinity.                                |
| 15 | M  |                                                            |
| 16 | Tu |                                                            |
| 17 | W  |                                                            |
| 18 | Th |                                                            |
| 19 | F  |                                                            |
| 20 | S  |                                                            |
| 21 | S  | Eleventh Sunday after Trinity.                             |
| 22 | M  |                                                            |
| 23 | Tu |                                                            |
| 24 | W  | St. Bartholomew.                                           |
| 25 | Th |                                                            |
| 26 | F  |                                                            |
| 27 | S  |                                                            |
| 28 | S  | Twelfth Sunday after Trinity.                              |
| 29 | M  |                                                            |
| 30 | Tu |                                                            |
| 31 | W  |                                                            |

# SEPTEMBER, 1898.

|    |    |                                                       |
|----|----|-------------------------------------------------------|
| 1  | TH |                                                       |
| 2  | F  |                                                       |
| 3  | S  |                                                       |
| 4  | S  | Thirteenth Sunday after Trinity.                      |
| 5  | M  |                                                       |
| 6  | TU | House Officers, &c., commence duty.                   |
| 7  | W  | Last day for applications for Clinical Clerkships and |
| 8  | TH | [Dresserships.                                        |
| 9  | F  |                                                       |
| 10 | S  |                                                       |
| 11 | S  | Fourteenth Sunday after Trinity.                      |
| 12 | M  |                                                       |
| 13 | TU |                                                       |
| 14 | W  | Meeting to appoint Clinical Clerks and Dressers.      |
| 15 | TH |                                                       |
| 16 | F  |                                                       |
| 17 | S  |                                                       |
| 18 | S  | Fifteenth Sunday after Trinity.                       |
| 19 | M  | Last day for Entry for B.Sc. Exam., Univ. Lond.       |
| 20 | TU |                                                       |
| 21 | W  | St. Matthew.                                          |
| 22 | TH |                                                       |
| 23 | F  |                                                       |
| 24 | S  |                                                       |
| 25 | S  | Sixteenth Sunday after Trinity.                       |
| 26 | M  |                                                       |
| 27 | TU |                                                       |
| 28 | W  |                                                       |
| 29 | TH | Michaelmas Day.                                       |
| 30 | F  | Last day for Essay for Grainger Prize.                |

*The Hospital Entrance Scholarships Examination takes place during the last week of this month.*

# OCTOBER, 1898.

|    |    |                                             |
|----|----|---------------------------------------------|
| 1  | S  |                                             |
| 2  | S  | Seventeenth Sunday after Trinity.           |
| 3  | M  | Last day for Entry Univ. Lond. M.B. Exam.   |
| 4  | TU | Clinical Clerks and Dressers commence duty. |
| 5  | W  |                                             |
| 6  | TH |                                             |
| 7  | F  | Meeting of Library Committee.               |
| 8  | S  |                                             |
| 9  | S  | Eighteenth Sunday after Trinity.            |
| 10 | M  |                                             |
| 11 | TU |                                             |
| 12 | W  |                                             |
| 13 | TH |                                             |
| 14 | F  |                                             |
| 15 | S  |                                             |
| 16 | S  | Nineteenth Sunday after Trinity.            |
| 17 | M  | Univ. Lond. B.Sc. Exam.                     |
| 18 | TU | St. Luke.                                   |
| 19 | W  |                                             |
| 20 | TH |                                             |
| 21 | F  |                                             |
| 22 | S  |                                             |
| 23 | S  | Twentieth Sunday after Trinity.             |
| 24 | M  |                                             |
| 25 | TU |                                             |
| 26 | W  |                                             |
| 27 | TH |                                             |
| 28 | F  | St. Simon and St. Jude.                     |
| 29 | S  |                                             |
| 30 | S  | Twenty-first Sunday after Trinity.          |
| 31 | M  | Univ. Lond. M.B. Exam.                      |

*The Registration and Museum Committees meet during this month.*

*The Primary Examination of the Society of Apothecaries is held Quarterly, in the months of October, January, April, and July. The Final is held monthly; the Surgical part commences on the second Wednesday, and the Medical on the Monday following.*

*First, Second, and Third Examinations of the Examining Board in England are held this month.*

# HOLDERS OF APPOINTMENTS IN ST. THOMAS'S HOSPITAL SINCE 1871.

## RESIDENT ASSISTANT PHYSICIANS.

|                      |                          |
|----------------------|--------------------------|
| 1871. G. H. EVANS    | 1885. H. W. G. MACKENZIE |
| 1874. F. C. TURNER   | 1888. H. P. HAWKINS      |
| 1876. S. J. SHARKEY  | 1891. H. G. TURNEY       |
| 1880. G. GULLIVER    | 1894. S. G. TOLLER       |
| 1882. C. E. SHEPPARD | 1897. C. R. BOX          |
| 1883. R. PERCY SMITH |                          |

## RESIDENT ASSISTANT SURGEONS.

|                       |                      |
|-----------------------|----------------------|
| 1871. W. W. WAGSTAFFE | 1886. W. H. BATTLE   |
| 1874. A. O. MACKELLAR | 1888. H. B. ROBINSON |
| 1876. H. H. CLUTTON   | 1891. E. C. STABB    |
| 1880. B. PITTS        | 1894. F. C. ABBOTT   |
| 1883. G. H. MAKINS    | 1897. C. S. WALLACE  |

## MEDICAL REGISTRARS.

|                        |                          |
|------------------------|--------------------------|
| 1871. S. E. SOLLY      | 1880. G. GULLIVER        |
| 1872. F. POLIARD       | 1882. C. E. SHEPPARD     |
| 1873. W. S. GREENFIELD | 1883. W. B. HADDEN       |
| 1875. H. W. VERDON     | 1888. H. W. G. MACKENZIE |
| 1876. T. C. CHARLES    | 1893. S. G. TOLLER       |
| 1877. E. S. NORRIS     | 1894. C. R. BOX          |
| 1878. T. C. CHARLES    | 1897. A. E. RUSSELL      |
| 1879. W. B. HADDEN     |                          |

## SURGICAL REGISTRARS.

|                                      |                      |
|--------------------------------------|----------------------|
| 1871. W. ANDERSON                    | 1886. G. H. MAKINS   |
| 1872. C. E. SAUNDERS                 | 1887. C. A. BALLANCE |
| 1873. C. CREIGHTON                   | 1888. E. SOLLY       |
| 1874. S. OSBORN                      | 1891. E. C. STABB    |
| 1876. { H. H. CLUTTON<br>C. H. NEWBY | 1892. F. C. ABBOTT   |
| 1878. H. P. POTTER                   | 1894. C. S. WALLACE  |
| 1881. W. H. BATTLE                   | 1897. E. O. THURSTON |

## OBSTETRIC REGISTRARS.

|                     |                   |
|---------------------|-------------------|
| 1893. W. W. H. TATE | 1897. A. F. STABB |
|---------------------|-------------------|

## HOUSE PHYSICIANS.

|          |                                                                                                                  |          |                                                                                                                                              |
|----------|------------------------------------------------------------------------------------------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 1871-2.  | E. COX<br>S. OSBORN<br>J. S. SLATER                                                                              | 1884-5.  | G. D. JOHNSTON<br>F. F. CAIGER<br>H. B. ROBINSON<br>H. W. G. MACKENZIE<br>F. W. S. STONE } (Non-<br>H. H. LANKESTER } res.)                  |
| 1872-3.  | B. ADDY<br>A. H. LAVER<br>L. WILLIAMS<br>W. GARTON<br>R. ZIMMERMAN                                               | 1885-6.  | R. M. WILLIAMS<br>J. M. CLARKE<br>J. S. HUTTON<br>E. D. RITCHIE<br>T. GLOVER LYON } (Non-<br>Y. SANEYOSHI } res.)<br>F. M. HAIG }            |
| 1873-4.  | E. WELCHMAN<br>H. B. DONKIN<br>T. HIGHTON<br>C. M. TAYLOR<br>H. S. BENNETT                                       | 1886-7.  | F. D. CROWDY<br>A. A. BROCKATT<br>C. S. EVANS<br>S. W. WHEATON<br>A. E. GODFREY } (Non-<br>A. J. H. MONTAGUE } res.)                         |
| 1874-5.  | A. S. L. NEWINGTON<br>J. W. CLARKSON<br>W. S. MAYOR<br>A. LINGARD                                                | 1887-8.  | H. P. HAWKINS<br>H. J. MACEVOY<br>W. W. ORD<br>E. HOBHOUSE<br>R. NAIRN<br>H. J. SMYTH } (Non-res.)<br>R. NAIRN }<br>J. T. CALVERT }          |
| 1875-6.  | C. H. NEWBY<br>G. F. ROSSITER<br>W. EDMUNDS<br>H. P. POTTER<br>S. W. J. JOSEPH                                   | 1888-9.  | H. B. LUARD<br>C. W. COOKE<br>H. C. BRISTOWE<br>H. G. TURNEY<br>C. H. ECCLES } (Non-<br>W. H. L. COPELAND } res.)                            |
| 1876-7.  | T. TWINING<br>J. F. NICHOLSON<br>J. R. LEESON<br>W. H. PAGE.                                                     | 1889-90. | T. P. COWEN<br>F. C. ABBOTT<br>F. E. FORWARD<br>S. G. TOLLER<br>M. H. SPENCER } (Non-<br>L. COBBETT } res.)                                  |
| 1877-8.  | J. A. M. MOULLIN<br>G. H. MAKINS<br>H. U. SMITH<br>W. TYRRELL                                                    | 1890-1.  | W. W. STABB<br>T. A. DUKES<br>A. KING<br>W. F. UMNEY<br>G. H. WICKHAM } (Non-<br>H. J. COOPER } res.)<br>H. LOW }<br>C. P. LOVELL }          |
| 1878-9.  | W. H. BATTLE<br>G. H. D. GIMLETTE<br>C. E. SHEPPARD<br>F. M. SANDWITH                                            | 1891-2.  | C. R. BOX<br>T. H. KELLOCK<br>C. LATTER<br>J. J. PERKINS<br>C. WYMAN<br>G. R. F. STILWELL } (Non-<br>D. F. SHEARER } res.)<br>W. P. PURVIS } |
| 1879-80. | W. W. GROOME<br>R. P. SMITH<br>J. SHAW<br>A. NEWSHOLME                                                           |          |                                                                                                                                              |
| 1880-1.  | H. P. BUTLER<br>G. S. HATTON<br>H. R. HUTTON<br>T. D. ACLAND                                                     |          |                                                                                                                                              |
| 1881-2.  | T. D. SAVILL<br>C. F. COXWELL<br>A. B. CARPENTER<br>S. W. SUTTON                                                 |          |                                                                                                                                              |
| 1882-3.  | A. E. WELLS<br>W. WANSBROUGH JONES<br>C. W. HAIG-BROWN<br>W. FELL<br>E. F. WHITE } (Non-<br>L. W. BICKLE } res.) |          |                                                                                                                                              |
| 1883-4.  | A. FOXWELL<br>H. M. N. MILTON<br>C. D. GREEN<br>W. HULL<br>W. J. SHEPPARD } (Non-<br>J. ORTFORD } res.)          |          |                                                                                                                                              |



HOUSE PHYSICIANS—*continued.*

|         |                                                                                                                                            |              |         |                                                                                                                                          |              |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------|------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 1892-3. | W. A. BOWRING<br>W. WATKINS-PITCHFORD<br>C. S. JAFFE<br>A. R. O. MILTON<br>W. P. FOOKS<br>A. DALZELL<br>E. M. HAINWORTH<br>M. R. P. DORMAN | } (Non-res.) | 1894-5. | T. G. NICHOLSON<br>A. S. F. GRÜNBAUM<br>F. J. BRAKENRIDGE<br>J. W. LAVER                                                                 | } (Non-res.) |
| 1893-4. | G. W. THOMISON<br>A. E. RUSSELL<br>W. J. C. MERRY<br>P. NORTHCOTE<br>G. W. H. BIRD<br>F. PERSHOUSE<br>C. W. WINDSOR                        |              | 1895-6. | E. G. C. DANIEL<br>L. L. JENNER<br>F. B. THORNTON<br>W. E. DIXON<br>P. J. A. SECCOMBE<br>F. G. LAYTON<br>E. W. PALIN<br>P. S. HICHENS    |              |
| 1894-5. | R. E. NIX<br>A. M. COLLCUTT<br>E. A. SAUNDERS<br>G. G. GENGE                                                                               |              | 1896-7. | W. H. J. PATERSON<br>E. H. T. NASH<br>G. J. CONFORD<br>L. W. RICHARDS<br>A. W. SIKES<br>J. P. SCATCHARD<br>J. S. FAIRBAIRN<br>E. STAINER |              |

## HOUSE SURGEONS.

|         |                                                                                            |          |                                                                                   |
|---------|--------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------|
| 1871-2. | R. CORY<br>H. WILLIAMS<br>S. OSBORN<br>T. H. BONSER                                        | 1879-80. | D. S. DAVIES<br>R. J. WILLIAMSON<br>R. P. SMITH<br>C. E. SHEPPARD                 |
| 1872-3. | E. SERGEANT<br>W. GARTON<br>A. H. LAVER<br>G. CLEGHORN                                     | 1880-1.  | J. R. LUNN<br>C. A. BALLANCE<br>H. P. BUTLER<br>A. B. CARPENTER                   |
| 1873-4. | I. BOULGER<br>E. WELCHMAN<br>A. V. MAYBURY<br>H. W. VERDON                                 | 1881-2.  | T. D. ACLAND<br>F. W. MARLOW<br>M. P. M. COLLIER<br>E. F. WHITE                   |
| 1874-5. | J. CROSSMAN<br>G. M. TAYLOR<br>G. F. ROSSITER<br>J. W. CLARKSON                            | 1882-3.  | W. A. DUNCAN<br>C. W. HAIG BROWN<br>H. M. MILTON<br>A. E. WELLS                   |
| 1875-6. | H. P. POTTER<br>H. H. CLUTTON<br>C. H. NEWBY<br>R. MAPLES                                  | 1883-4.  | W. WANSBROUGH JONES<br>G. F. COOPER<br>F. F. CAIGER<br>G. D. JOHNSTON             |
| 1876-7. | B. PITTS<br>R. MAPLES<br>C. C. SMITH<br>W. EDMUNDS                                         | 1884-5.  | J. ORFORD<br>H. B. ROBINSON<br>W. HULL<br>C. D. GREEN                             |
| 1877-8. | J. F. NICHOLSON<br>J. BLACK<br>F. H. WEEKES<br>W. H. BATTLE                                | 1885-6.  | R. LAWSON<br>B. RELTON<br>F. D. CROWDY<br>H. CAMERON KIDD                         |
| 1878-9. | G. H. MAKINS<br>G. H. D. GIMLETTE<br>H. U. SMITH<br>W. F. HASLAM<br>K. TAKAKI<br>H. CASTLE | 1886-7.  | E. S. GOODY<br>F. E. NICHOL<br>E. D. RITCHIE<br>J. S. HUTTON<br>W. H. C. STAVELEY |

HOUSE SURGEONS—*continued.*

|          |                                                                                                                                      |         |                                                                                                                                            |
|----------|--------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------|
| 1887-8.  | S. H. JONES<br>J. H. TONKING<br>E. C. STABB<br>L. A. BIDWELL                                                                         | 1892-3. | P. J. ATKEY<br>W. P. PURVIS<br>R. R. LAW<br>W. G. SUTCLIFFE<br>W. L. WAINWRIGHT                                                            |
| 1888-9.  | W. F. BROOK<br>F. FAWSETT<br>W. W. ORD<br>J. T. CALVERT<br>F. C. ABBOTT<br>R. V. SOLLY<br>C. H. JAMES<br>C. BROWN                    | 1893-4. | C. S. WALLACE<br>E. SMITH<br>W. REDPATH<br>C. PLANCK<br>S. W. F. RICHARDSON<br>E. M. HAINWORTH<br>A. R. O. MILTON<br>G. W. THOMPSON        |
| 1889-90. | H. G. TURNEY<br>A. N. BOYCOTT<br>H. H. HULBERT<br>F. R. S. MILTON<br>T. W. LAMBERT<br>T. P. COWEN<br>G. E. ANSON<br>H. GERVIS        | 1894-5. | H. A. DICKSON<br>L. J. MISKIN<br>A. W. CUFF<br>W. J. C. MERRY<br>G. J. ARNOLD<br>R. FOX SYMONS<br>A. E. RUSSELL<br>H. W. HARDING           |
| 1890-1.  | A. F. STABB<br>A. C. LANKESTER<br>H. W. NIX<br>E. E. WARE<br>S. G. TOLLER<br>W. S. GRIFFITH<br>W. G. G. STOKES<br>L. A. J. ROUILLARD | 1895-6. | E. O. THURSTON<br>A. L. HOME<br>W. G. STONE<br>H. J. DAVIS<br>L. A. R. WALLACE<br>H. C. CROUCH<br>J. L. PRAIN<br>G. J. CONFORD             |
| 1891-2.  | L. COBBETT<br>T. H. HAYDON<br>J. R. HARPER<br>C. WYMAN<br>T. H. KELLOCK<br>C. R. BOX<br>W. F. E. MILTON<br>T. A. M. FORDE            | 1896-7. | B. DYBALL<br>P. W. KENT<br>J. SMITH<br>W. D. FRAZER<br>A. ROTHERHAM<br>A. J. MARTINEAU<br>F. H. GERVIS<br>R. G. STRANGE<br>G. E. O. TAYLOR |
| 1892-3.  | A. BANKS<br>H. BURDEN<br>J. H. FISHER                                                                                                |         |                                                                                                                                            |

## ASSISTANT HOUSE PHYSICIANS.

|          |                                                                                                              |         |                                                                                                                                      |
|----------|--------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------|
| 1877-8.  | W. TYRRELL<br>R. B. BOTHAMLEY<br>W. H. BATTLE<br>E. H. HARE                                                  | 1880-1. | J. R. LUNN<br>T. D. SAVILL<br>G. S. HATTON<br>F. R. WALTERS<br>C. B. RICHARDSON<br>H. SWALE<br>J. B. LAWFORD                         |
| 1878-9.  | S. A. CRICK<br>J. H. BATTYE<br>K. TAKAKI<br>W. W. GROOME<br>W. B. HADDEN<br>W. F. HASLAM<br>R. C. BENNINGTON | 1881-2. | C. A. BALLANCE<br>M. P. M. COLLIER<br>A. B. CARPENTER<br>H. N. HOLBERTON<br>S. W. SUTTON<br>A. E. WELLS<br>F. W. MARLOW<br>R. HEELIS |
| 1879-80. | R. P. SMITH<br>D. S. DAVIES<br>J. SHAW<br>A. NEWSHOLME<br>J. R. LUNN<br>R. J. WILLIAMSON                     | 1882-3. | F. E. MARSTON<br>G. F. COOPER                                                                                                        |

ASSISTANT HOUSE PHYSICIANS—*continued.*

|         |                                                                               |          |                                                                      |
|---------|-------------------------------------------------------------------------------|----------|----------------------------------------------------------------------|
| 1882-3. | C. W. HAIG-BROWN<br>H. M. N. MILTON<br>W. FELL<br>W. J. SHEPPARD              | 1885-6.  | J. R. STADDON<br>E. D. RITCHIE<br>E. S. GOODY<br>A. E. GODFREY       |
| 1883-4. | W. HULL<br>F. F. CAIGER<br>C. D. GREEN<br>W. B. TOMSON                        | 1886-7.  | C. S. EVANS<br>H. CAMERON KIDD<br>W. H. C. STAVELEY<br>H. P. HAWKINS |
| 1884-5. | T. SCUTT<br>Y. SANEYOSHI<br>R. LAWSON<br>H. W. G. MACKENZIE<br>R. M. WILLIAMS | 1887-8.  | H. A. SANSOM<br>H. T. BULSTRODE<br>S. B. COOK                        |
|         |                                                                               | 1888-9.  | H. B. SEDDON<br>G. R. ANDERSON                                       |
|         |                                                                               | 1889-90. | W. B. DE JERSEY<br>T. H. DICKSON                                     |

## ASSISTANT HOUSE SURGEONS.

|          |                                                                                                                |          |                                                                                                                                   |
|----------|----------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------|
| 1877-8.  | E. L. G. GAMBLE<br>G. H. D. GIMLETTE                                                                           | 1877-8.  | L. A. BIDWELL<br>W. F. BROOK                                                                                                      |
| 1878-9.  | W. F. HASLAM<br>H. CASTLE<br>R. P. SMITH<br>D. S. DAVIES                                                       |          | J. T. CALVERT<br>W. W. ORD<br>F. FAWSETT<br>E. SOLLY<br>C. BROWN<br>R. V. SOLLY                                                   |
| 1879-80. | R. J. WILLIAMSON<br>C. A. BALLANCE<br>A. NEWSHOLME<br>J. R. LUNN                                               | 1888-9.  | C. H. JAMES<br>C. W. COOKE<br>S. B. COOK<br>E. HOBHOUSE<br>H. DUNCAN<br>F. C. ABBOTT<br>A. N. BOYCOTT<br>H. H. HULBERT            |
| 1880-1.  | F. R. WALTERS<br>C. B. RICHARDSON<br>M. P. M. COLLIER<br>H. SWALE                                              |          |                                                                                                                                   |
| 1881-2.  | S. W. SUTTON<br>A. E. WELLS<br>E. F. WHITE<br>C. W. HAIG-BROWN                                                 | 1889-90. | F. R. S. MILTON<br>H. C. BRISTOWE<br>G. E. ANSON<br>H. GERVIS<br>T. P. COWEN<br>A. F. STABB<br>A. C. LANKESTER<br>J. H. DEWHURST  |
| 1882-3.  | H. M. N. MILTON<br>W. FELL<br>G. F. COOPER<br>W. HULL                                                          |          |                                                                                                                                   |
| 1883-4.  | W. WANSBROUGH JONES<br>G. D. JOHNSTON<br>F. F. CAIGER<br>W. J. SHEPPARD                                        | 1890-1.  | H. W. NIX<br>E. E. WARE<br>S. G. TOLLER<br>W. G. G. STOKES<br>D. F. SHEARER<br>L. A. J. ROUILLARD<br>T. H. HAYDON<br>J. R. HARPER |
| 1884-5.  | H. B. ROBINSON<br>C. D. GREEN<br>R. LAWSON<br>B. RELTON<br>Y. SANEYOSHI                                        |          |                                                                                                                                   |
| 1885-6.  | E. D. RITCHIE<br>F. D. CROWDY<br>H. CAMERON KIDD<br>E. S. GOODY                                                | 1891-2.  | L. COBBETT<br>C. WYMAN<br>W. F. E. MILTON<br>T. A. M. FORDE<br>T. H. KELLOCK<br>C. R. BOX<br>H. BURDEN<br>P. J. ATKEY             |
| 1886-7.  | F. E. NICHOL<br>C. S. EVANS<br>W. H. C. STAVELEY<br>S. H. JONES<br>K. TOTSUKA<br>J. H. TONKING<br>E. C. STAEBB |          |                                                                                                                                   |

ASSISTANT HOUSE SURGEONS—*continued.*

|         |                                                                                                                                    |         |                                                                                                                                                       |
|---------|------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1892-3. | A. BANKS<br>J. H. FISHER<br>R. R. LAW<br>W. G. SUTCLIFFE<br>W. P. PURVIS<br>W. L. WAINWRIGHT<br>C. S. WALLACE<br>E. SMITH          | 1894-5. | H. W. HARDING<br>E. O. THURSTON<br>A. L. HOME                                                                                                         |
| 1893-4. | W. REDPATH<br>C. PLANCK<br>E. M. HAINWORTH<br>A. R. O. MILTON<br>S. W. F. RICHARDSON<br>R. W. ORD<br>J. W. HEWETT<br>H. A. DICKSON | 1895-6. | W. G. STONE<br>H. J. DAVIS<br>L. A. R. WALLACE<br>H. C. CROUCH<br>J. L. PRAIN<br>G. J. CONFORD<br>B. DYBALL<br>P. W. KENT<br>J. SMITH<br>W. D. FRAZER |
| 1894-5. | L. J. MISKIN<br>A. W. CUFF<br>G. J. ARNOLD<br>R. FOX SYMONS<br>A. E. RUSSELL                                                       | 1896-7. | A. J. MARTINEAU<br>F. H. GERVIS<br>R. G. STRANGE<br>G. E. O. TAYLOR<br>W. H. J. PATERSON<br>A. W. TUKE<br>L. GILBERT<br>S. N. BABINGTON               |

## RESIDENT ACCOUCHEURS.

|          |                                                                      |         |                                                                   |
|----------|----------------------------------------------------------------------|---------|-------------------------------------------------------------------|
| 1871-2.  | G. C. FRANKLIN.<br>B. ADDY<br>W. GARTON                              | 1880-1. | H. CASTLE<br>A. NEWSHOLME<br>J. SHAW<br>J. R. LUNN                |
| 1872-3.  | J. S. SLATER<br>M. H. C. PALMER<br>E. SERGEANT<br>L. WILLIAMS        | 1881-2. | W. F. HASLAM<br>H. P. BUTLER<br>W. A. DUNCAN<br>T. D. ACLAND      |
| 1873-4.  | G. M. WHITEHEAD<br>C. H. NEWBY<br>I. BOULGER<br>E. H. DAVIS          | 1882-3. | A. E. WELLS<br>G. F. COOPER<br>S. W. SUTTON<br>T. D. SAVILL       |
| 1874-5.  | H. S. BENNETT<br>C. M. TAYLOR                                        | 1883-4. | F. F. CAIGER<br>W. FELL<br>W. J. SHEPPARD<br>W. WANSBROUGH JONES  |
| 1875-6.  | W. EDMUNDS<br>S. W. J. JOSEPH<br>G. F. ROSSITER<br>C. C. SMITH       | 1884-5. | J. ORFORD<br>W. HULL<br>C. D. GREEN<br>G. D. JOHNSTON             |
| 1876-7.  | W. MORGAN<br>T. MILMAN<br>B. PITTS<br>R. MAPLES                      | 1885-6. | R. E. ROUSE<br>J. E. KERSHAW<br>H. H. LANKESTER<br>A. A. BROCKATT |
| 1877-8.  | C. H. H. CAMERON<br>G. H. D. GIMLETTE<br>C. H. WHITE<br>F. H. WEEKES | 1886-7. | J. S. HUTTON<br>C. YEOMAN<br>A. E. GODFREY<br>H. J. MACEVOY       |
| 1878-9.  | J. F. NICHOLSON<br>W. TYRRELL<br>F. M. SANDWITH<br>H. U. SMITH       | 1887-8. | E. SOLLY<br>W. A. BOND<br>H. J. SMYTH<br>J. D. BALLANCE           |
| 1879-80. | W. H. BATTLE<br>K. TAKAKI<br>C. E. SHEPPARD<br>C. A. BALLANCE        | 1888-9. | S. W. WHEATON<br>C. H. JAMES<br>H. B. LUARD<br>E. C. STABB        |

**RESIDENT ACCOUCHEURS—continued.**

1889-90. F. FAWSETT  
G. R. ANDERSON  
G. E. ANSON  
A. N. BOYCOTT

1890-1. H. B. OSBURN  
H. GERVIS  
H. LOW  
W. R. CARTER

**SENIOR OBSTETRIC HOUSE PHYSICIANS.**

1891-2. J. R. HARPER  
W. G. G. STOKES  
W. F. UMNEY  
A. BANKS

1892-3. W. L. WAINWRIGHT  
T. H. HAYDON  
C. S. WALLACE  
R. K. ELLIS

1893-4. W. A. BOWRING  
J. H. FISHER  
R. F. CHANCE  
T. W. HICKS

1894-5. C. S. JAFFÉ  
P. C. FENWICK  
E. G. E. ARNOLD  
W. E. F. TINLEY

1895-6. S. W. F. RICHARDSON  
G. CANDLER  
E. A. SAUNDERS  
G. G. GENGE

1896-7. C. W. GRANT WILSON  
P. L. BLABER  
E. L. COLLIS  
A. L. HOME

**SENIOR OBSTETRIC CLERKS.**

1889-90. H. B. OSBURN  
H. LOW

1890-1. W. G. G. STOKES  
W. R. CARTER  
J. R. HARPER  
H. D. LEVICK

**JUNIOR OBSTETRIC HOUSE PHYSICIANS.**

1891-2. W. F. UMNEY  
A. BANKS  
W. L. WAINWRIGHT  
T. H. HAYDON

1892-3. C. LATTER  
C. S. WALLACE  
R. K. ELLIS  
W. A. BOWRING

1893-4. J. H. FISHER  
R. F. CHANCE  
T. W. HICKS  
C. S. JAFFE

1894-5. P. C. FENWICK  
E. G. E. ARNOLD  
W. E. F. TINLEY  
S. W. F. RICHARDSON

1895-6. G. CANDLER  
E. A. SAUNDERS  
G. G. GENGE  
C. W. GRANT WILSON.

1896-7. P. L. BLABER  
E. L. COLLIS  
A. L. HOME  
J. B. TOMBLESON

**OPHTHALMIC HOUSE SURGEONS.**

These appointments took the place of the "Clinical Assistants in the Eye Department."

1890-1. H. C. BRISTOWE  
F. E. FORWARD

1891-2. C. H. USHER  
S. G. TOLLER

1892-3. J. FISHER  
E. P. ISAACS

1893-4. J. F. RUDALL  
J. H. FISHER

1894-5. J. H. FISHER  
H. G. TOOMBS

1895-6. A. H. P. DAWNAY  
E. A. SAUNDERS

1896-7.

P. S. HICHENS

E. HOPKINSON



# SCHOLARSHIPS AND MEDALS.

## ENTRANCE SCIENCE SCHOLARS.

|          |                                     |          |                                  |
|----------|-------------------------------------|----------|----------------------------------|
| 1875-6.  | H. A. H. FENTON<br>T. D. SAVILL     | 1887-8.  | J. E. HARRIS<br>W. B. WINSTON    |
| 1876-7.  | R. J. WILLIAMSON<br>H. N. HOLBERTON | 1888-9.  | E. M. HAINWORTH<br>E. SMITH      |
| 1877-8.  | W. WANSBROUGH JONES<br>A. E. WELLS  | 1889-90. | T. G. NICHOLSON<br>A. E. RUSSELL |
| 1878-9.  | W. HULL                             | 1890-1.  | P. J. DEAR<br>W. E. DIXON        |
| 1879-80. | R. M. WILLIAMS<br>B. RELTON         |          | H. C. CROUCH                     |
| 1880-1.  | R. LAWSON<br>H. H. LANKESTER        | 1891-2.  | A. H. STEWART<br>F. H. GERVIS    |
| 1881-2.  | SYDNEY H. JONES<br>J. S. HUTTON     | 1892-3.  | A. W. SIKES<br>C. G. SELIGMANN   |
| 1882-3.  | H. DUNCAN<br>E. D. SHIRTLIFF        | 1893-4.  | R. W. C. PIERCE<br>H. E. HEWITT  |
| 1883-4.  | C. W. COOKE<br>F. FAWSETT           | 1894-5.  | J. GAFF<br>H. R. BEALE           |
| 1884-5.  | F. C. ABBOTT<br>C. J. MARTIN        | 1895-6.  | F. B. SKERRETT<br>W. B. FRY      |
| 1885-6.  | A. F. STABB<br>S. G. TOLLER         | 1896-7.  | A. B. LINDSEY<br>R. E. ROBERTS   |
| 1886-7.  | C. P. LOVELL<br>M. C. CLUTTERBUCK   |          |                                  |

## UNIVERSITY SCHOLARS.

|         |                    |         |                  |
|---------|--------------------|---------|------------------|
| 1894-5. | W. McDougall       | 1895-6. | P. W. G. SARGENT |
| 1896-7. | R. J. HORTON SMITH |         |                  |

## TITE SCHOLARS.

1875. Change made in mode of award.

|           |                     |          |                     |
|-----------|---------------------|----------|---------------------|
| 1861-2-3. | H. SUMMERHAYES      | 1884-5.  | F. C. ABBOTT        |
| 1864-5-8. | J. J. RIDGE         | 1885-6.  | A. F. STABB         |
| 1867-8.   | H. MEADOWS          | 1886-7.  | H. BURDEN           |
| 1870-1-2. | I. BOULGER          | 1887-8.  | J. H. FISHER        |
| 1873-4-5. | F. H. PECK          | 1888-9.  | E. SMITH            |
| 1875-6.   | T. D. SAVILL        | 1889-90. | S. W. F. RICHARDSON |
| 1876-7.   | W. A. DUNCAN        | 1890-1.  | K. J. PREVITÉ ORTON |
| 1877-8.   | W. WANSBROUGH JONES | 1891-2.  | J. C. HARCOURT      |
| 1878-9.   | F. H. FURNIVAL      | 1892-3.  | A. W. SIKES         |
| 1879-80.  | C. D. GREEN         | 1893-4.  | H. E. HEWITT        |
| 1880-1.   | R. LAWSON           | 1894-5.  | J. GAFF             |
| 1881-2.   | SYDNEY H. JONES     | 1895-6.  | C. F. SELOUS        |
| 1882-3.   | H. P. HAWKINS       | 1896-7.  | C. N. SEARS         |
| 1883-4.   | F. FAWSETT          |          |                     |

## MUSGROVE SCHOLARS.

Founded, April, 1875.

|           |                   |            |                     |
|-----------|-------------------|------------|---------------------|
| 1875-6-7. | S. J. TAYLOR      | 1886-7-8.  | A. F. STABB         |
| 1877-8-9. | W. A. DUNCAN      | 1888-9-90. | J. H. FISHER        |
| 1880-1-2. | W. B. TOMSON      | 1890-1-2.  | S. W. F. RICHARDSON |
| 1882-3-4. | S. H. JONES } æq. | 1892-3-4.  | M. TAKAYASU         |
|           | K. TOTSUKA }      | 1894-5-6.  | H. E. HEWITT        |
| 1884-5-6. | F. FAWSETT        | 1896-7.    | C. F. SELOUS        |

## PEACOCK SCHOLARS.

1883-4-5. H. P. HAWKINS  
 1885-6-7. F. C. ABBOTT  
 1887-8-9. C. P. LOVELL  
 1889-90-1. C. PLANCK

1891-2-3. G. G. GENGE  
 1893-4-5. A. W. SIKES  
 1895-6-7. J. GAFF

## CHESELDEN MEDALISTS.

1850-1. F. J. MONEY  
 1851-2. H. LANKESTER  
           T. B. CROSBY (bronze  
                           medal)  
 1852-3. J. E. MORETON  
 1853-4. W. N. CHIPPERFIELD  
 1854-5. W. M. ORD  
 1855-6. J. W. COUSINS  
 1856-7. C. F. GEORGE  
 1857-8. E. WOAKES  
 1858-9. C. H. DRAKE  
 1859-60. T. DRAKE  
 1860-1. J. W. HICKS  
 1861-2. J. F. DECK  
 1862-3. C. A. GREAVES  
 1863-4. W. W. WAGSTAFFE  
 1864-5. F. H. WARD  
 1865-6. W. W. INGLIS  
 1866-7. W. ANDERSON  
 1867-8. F. POLLARD  
 1868-9. L. M. THOMAS  
 1869-70. E. SERGEANT  
 1870-1. J. H. BONSER  
 1871-2. A. H. LAVER  
 1872-3. G. F. ROSSITER  
 1873-4. H. P. POTTER

1874-5. J. F. NICHOLSON  
 1875-6. \_\_\_\_\_  
 1876-7. H. U. SMITH  
 1877-8. W. F. HASLAM  
 1878-9. K. TAKAKI  
 1879-80. W. A. DUNCAN  
 1880-1. C. W. HAIG-BROWN  
 1881-2. \_\_\_\_\_  
 1882-3. G. D. JOHNSTON  
 1883-4. R. LAWSON  
 1884-5. S. H. JONES  
 1885-6. J. H. TONKING  
 1886-7. F. FAWSETT  
 1887-8. F. C. ABBOTT  
 1888-9. A. C. LANKESTER  
 1889-90. T. H. KELLOCK  
 1890-1. A. BANKS  
 1891-2. W. G. SUTCLIFFE  
 1892-3. S. W. F. RICHARDSON  
 1893-4. E. O. THURSTON  
 1894-5. B. DYBALL  
           A. J. MARTINEAU  
                           (Bronze Medal)  
 1895-6. J. P. SCATCHARD  
 1896-7. A. C. ROBINSON

## NEWMAN SMITH PRIZE (MEAD).

1850. J. W. KEYWORTH  
 1853. J. E. MORETON  
 1854. E. CLAPTON

1855. W. H. STONE  
 1858. E. WOAKES  
 1859. J. HILDITCH

## MEAD MEDALISTS.

In lieu of the Newman Smith Prize from December, 1874.

1874-5. J. F. NICHOLSON  
 1875-6. \_\_\_\_\_  
 1876-7. G. B. LONGSTAFF  
 1877-8. S. J. TAYLOR  
 1878-9. T. D. ACLAND  
 1879-80. C. F. COXWELL  
 1880-1. W. WANSBROUGH JONES  
 1881-2. W. HULL  
 1882-3. F. F. CAIGER  
 1883-4. H. W. G. MACKENZIE  
 1884-5. F. D. CROWDY  
 1885-6. S. W. WHEATON

1885-6. H. J. MACEVOY (Bronze  
                           Medal)  
 1886-7. W. W. ORD  
 1887-8. H. G. TURNEY  
 1888-9. S. G. TOLLER  
 1889-90. W. W. STABB  
 1890-1. C. LATTER  
 1891-2. A. R. O. MILTON  
 1892-3. E. A. SAUNDERS  
 1893-4. G. G. GENGE  
 1894-5. F. B. THORNTON  
 1895-6. A. W. SIKES

1896-7 H. C. JONAS

## TREASURER'S GOLD MEDALISTS.

|          |                                                               |          |                     |
|----------|---------------------------------------------------------------|----------|---------------------|
| 1846-7.  | H. D. BENWELL                                                 | 1871-2.  | A. V. MAYBURY       |
| 1847-8.  | J. S. BRISTOWE                                                | 1872-3.  | G. F. ROSSITER      |
| 1848-9.  | L. W. SEDGWICK                                                | 1873-4.  | H. C. SANDFORD      |
| 1849-50. | A. CARPENTER                                                  | 1874-5.  | J. F. NICHOLSON     |
| 1850-1.  | { F. J. MONEY (Gold Medal)<br>C. W. CHALDECOTT (Silver Medal) | 1875-6.  |                     |
| 1851-2.  | H. LANKESTER                                                  | 1876-7.  | C. E. SHEPPARD      |
| 1852-3.  | J. E. MORETON                                                 | 1877-8.  | S. J. TAYLOR        |
| 1853-4.  | W. N. CHIPPERFIELD                                            | 1878-9.  | K. TAKAKI           |
| 1854-5.  | W. M. ORD                                                     | 1879-80. | W. A. DUNCAN        |
| 1855-6.  | W. H. STONE                                                   | 1880-1.  | W. WANSBROUGH JONES |
| 1856-7.  | J. WILLIAMS                                                   | 1881-2.  | W. J. SHEPPARD      |
| 1857-8.  | H. GERVIS                                                     | 1882-3.  | W. B. TOMSON        |
| 1858-9.  | C. H. DRAKE                                                   | 1883-4.  | R. LAWSON           |
| 1859-60. | T. DRAKE                                                      | 1884-5.  | S. H. JONES         |
| 1860-1.  | J. W. HICKS                                                   | 1885-6.  | H. J. SMYTH         |
| 1861-2.  | J. F. DECK                                                    | 1886-7.  | F. FAWSETT          |
| 1862-3.  | H. SUMMERHAYES                                                | 1887-8.  | F. C. ABBOTT        |
| 1863-4.  | W. W. WAGSTAFFE                                               | 1888-9.  | A. F. STABB         |
| 1864-5.  | F. H. WARD                                                    | 1889-90. | A. KING             |
| 1865-6.  | A. WALLER                                                     | 1890-1.  | J. H. FISHER        |
| 1866-7.  | N. C. DOBSON                                                  | 1891-2.  | E. SMITH            |
| 1867-8.  | J. J. RIDGE                                                   | 1892-3.  | S. W. F. RICHARDSON |
| 1868-9.  | H. W. SAUNDERS                                                | 1893-4.  | G. G. GENGE         |
| 1869-70. | J. S. SLATER                                                  | 1894-5.  | A. J. MARTINEAU     |
| 1870-1.  | B. ADDY                                                       | 1895-6.  | J. P. SCATCHARD     |
|          |                                                               | 1896-7.  | A. W. SIKES         |

## SOLLY MEDALISTS.

Founded, 1873.

|       |                     |       |               |
|-------|---------------------|-------|---------------|
| 1877. | W. H. BATTLE        | 1886. | E. SOLLY      |
|       | C. W. DE LACY EVANS | 1888. | C. H. JAMES   |
| 1878. | C. E. SHEPPARD      | 1890. | C. WYMAN      |
| 1880. | C. A. BALLANCE      | 1892. | W. B. WINSTON |
| 1882. | W. A. DUNCAN        | 1894. | M. A. TEALE   |
| 1884. | J. PIETERSEN        | 1896. | E. H. T. NASH |

## GRAINGER TESTIMONIAL PRIZEMEN.

|         |                   |         |                   |
|---------|-------------------|---------|-------------------|
| 1866.   | J. J. RIDGE       | 1886-7. | F. G. PARSONS     |
| 1874-5. | H. P. POTTER      | 1893-4. | A. S. F. GRÜNBAUM |
| 1878-9. | W. A. DUNCAN      | 1896-7. | W. MCDUGALL       |
| 1882-3. | C. S. SHERRINGTON |         |                   |

## BRISTOWE MEDALISTS.

|         |            |                 |              |
|---------|------------|-----------------|--------------|
| 1894-5. | A. L. HOME | 1895-6.         | E. L. COLLIS |
|         | 1896-7.    | C. G. SELIGMANN |              |

## THE SALTERS' COMPANY RESEARCH FELLOWS.

|       |             |       |             |
|-------|-------------|-------|-------------|
| 1895. | C. S. JAFFÉ | 1896. | W. E. DIXON |
|-------|-------------|-------|-------------|

## BEANEY SCHOLAR.

1896. B. DYBALL

# LOCAL LIST OF OLD STUDENTS OF ST. THOMAS'S HOSPITAL.

## ENGLAND AND WALES.

*(Excluding the London District.)*

- |                                                                                        |                                                                                                                            |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| ABBOTS-BROMLEY, STAFF.—<br>N. J. Newbould.                                             | BAWTRY, YORKS.—<br>W. F. Ward.                                                                                             |
| ABBOTSBURY, DORSET.—<br>W. Hawkins.                                                    | BECCLES, SUFFOLK.—<br>H. P. Helsham.                                                                                       |
| ABERDARE, GLAMORG.—<br>E. Jones, E. J. T. Jones.                                       | BECKENHAM, KENT.—<br>E. Carpenter, G. R. F. Stilwell,<br>E. S. Whelpton.                                                   |
| ABERYSTWITH, CARD.—<br>T. P. Beddoes.                                                  | BEDFORD.—<br>C. G. Johnson, W. G. Johnson,<br>A. S. Phillips, W. Stokes (retired).                                         |
| AINTREE, LANC.—<br>E. S. Sugden.                                                       | BERRIEW, MONTG.—<br>F. W. Waters.                                                                                          |
| ALBRIGHTON, SALOP.—<br>H. A. Bull.                                                     | BEXHILL, SUSSEX.—<br>J. REW.                                                                                               |
| ALDERNEY, CHANNEL ISLANDS.—<br>E. W. Livesey.                                          | BIRKENHEAD, CHESHIRE.—<br>H. L. Pearson.                                                                                   |
| ALFORD, LINC.—<br>A. E. Odling.                                                        | BIRMINGHAM, WARWICK.—<br>J. D. Ballance, H. R. Bracey, A.<br>Foxwell, W. F. Haslam, A. Price,<br>F. B. G. Stableford.      |
| ALNWICK, NTHLD.—<br>R. B. Robson.                                                      | BISHOP'S STORTFORD, HERTS.—<br>H. Gervis, J. E. Morris.                                                                    |
| ASHBY-DE-LA-ZOUCH, LEIC.—<br>R. R. W. Logan.                                           | BLACKROD, LANC.—<br>H. Smith.                                                                                              |
| ASKAM-IN-FURNESS, LANCS.—<br>S. B. Cook.                                               | BLAGDON, SOMERS.—<br>T. O. Halliwell.                                                                                      |
| AUDLEM, CHESH.—<br>H. Greaves.                                                         | BOGNOR, SUSSEX.—<br>L. N. Pentreath.                                                                                       |
| AUGHTON, YORKS.—<br>W. Garton.                                                         | BOOTLE, LANC.—<br>R. J. Sprakeling.                                                                                        |
| AYLESTONE, LEIC.—<br>E. H. Snoch.                                                      | BOROUGHBRIDGE, YORKS.—<br>J. Sedgwick.                                                                                     |
| AYLSHAM, NORFOLK.—<br>P. C. Shephard.                                                  | BORKOWASH, DERBYSHIRE.—<br>J. A. Hunt.                                                                                     |
| BAGSHOT, SURREY.—<br>H. B. Osburn.                                                     | BOSTON, LINC.—<br>F. Snaith, R. E. E. South.                                                                               |
| BAKEWELL, DERBY.—<br>E. B. Wrench, E. M. Wrench.                                       | BOTESDALE, SUFFOLK.—<br>A. W. Pearse.                                                                                      |
| BAMBER BRIDGE, LANC.—<br>J. Bibby.                                                     | BOTLEY, HANTS.—<br>A. Pern.                                                                                                |
| BANBURY, OXFORD.—<br>R. Rygate.                                                        | BOURNEMOUTH, HANTS.—<br>T. W. Blake, H. K. Hitchcock,<br>W. H. L. Marriner, W. S. Tebb,<br>G. E. Weary, G. F. Worthington. |
| BARNSTAPLE, DEVON.—<br>J. R. Harper, T. Johnston.                                      | BRADFORD, YORKS.—<br>P. G. Lodge, S. Lodge.                                                                                |
| BARTON-UPON-HUMBER, LINC.—<br>W. H. Sissons.                                           | BRADFORD-UPON-AVON, WILTS.—<br>W. J. A. Adye.                                                                              |
| BASCHURCH, SALOP.—<br>E. H. O. Sankey.                                                 | BRAMERTON, NORFOLK.—<br>C. E. Hardyman (retired).                                                                          |
| BASLOW, DERBYSHIRE.—<br>E. M. Wrench.                                                  |                                                                                                                            |
| BATH, SOMERSET.—<br>R. A. Bayliss, A. L. Fuller, W. N.<br>Heygate, J. Jarvis, P. King. |                                                                                                                            |
| BATLEY, YORKS.—<br>J. Russell.                                                         |                                                                                                                            |

- BRAUNTON, DEVON.—  
W. J. Harper.
- BRECON.—  
G. P. Francis.
- BRENT KNOLL, SOMERS.—  
J. W. Papillon.
- BRENTFORD, MIDDLESEX.—  
W. S. Fincham, F. N. Williams.
- BRIDGWATER, SOMERS.—  
G. W. H. Bird, Rev. C. W. Whistler.
- BRIDLINGTON-QUAY, YORKS.—  
H. J. C. Godfrey.
- BRIDPORT, DORSET.—  
S. J. Allden.
- BRIGHTLINGSEA, ESSEX.—  
H. S. Cooper.
- BRIGHTON, SUSSEX.—  
W. V. Bird (retired), J. Brock, E. Hobhouse, N. L. Hood, L. Houghton, L. Huntley, G. D. Kerr, A. Newsholme, G. W. Parker, C. B. Richardson, R. E. Rouse, C. J. Smith, F. H. Sturdee, E. Treves, E. Webster, C. H. Welch.
- BRISTOL.—  
H. Appleton (ret.), F. St. J. Bullen, D. S. Davies, J. A. Harding (retired), W. D. Henderson, H. Summerhayes.
- BRITON FERRY, GLAMORG.—  
A. Jeffreys.
- BRIXWORTH, NORTHANTS.—  
W. L. Wainwright.
- BROAD CHALK, WILTS.—  
A. Longman.
- BROADWAS-ON-TEME, WORC.—  
J. T. Penhall (retired).
- BROCKHURST, HANTS.—  
R. Holloway.
- BROMLEY, KENT.—  
P. I. Cook, W. W. Inglis.
- BROMSGROVE, WORC.—  
H. C. Kidd.
- BUCKDEN, HUNTS.—  
W. H. Hillyer.
- BUDLEIGH-SALTERTON, DEVON.—  
R. Walker.
- BUGBROOKE, NORTHANTS.—  
F. C. W. Hounsell.
- BURGH, LINC.—  
G. Cross.
- BURTON-ON-TRENT, STAFF.—  
O. F. Frohwein.
- BURWASH, SUSSEX.—  
W. Summerhayes.
- BURY ST. EDMUNDS, SUFF.—  
J. S. Hinnell.
- BYFLEET, SURREY.—  
G. A. Child, J. J. Powell, H. S. Willson.
- CAERLEON, MON.—  
C. W. De Gruchy.
- CALDICOT, MON.—  
H. H. Heffernan.
- CAMBORNE, CORNWALL.—  
A. Harris-Bickford, J. T. Thomas, J. H. Tonking.
- CAMBRIDGE.—  
L. Cobbett, J. Colston, J. Hough, W. S. Melsome, R. E. Nix, G. E. Wherry, E. Whichello.
- CANE HILL, SURREY.—  
A. N. Boycott, J. M. Moody, A. Rotherham.
- CAPEL, SURREY.—  
J. L. Jardine.
- CARISBROOKE, I.W.—  
W. J. O. Ray.
- CARLISLE, CUMB.—  
S. H. Hall.
- CARSHALTON, SURREY.—  
J. Wallace (retired).
- CASTLETON, YORKS.—  
H. B. Shepherd.
- CATERHAM VALLEY, SURREY.—  
W. S. Johns.
- CHALFONT, BUCKS.—  
C. Brooks.
- CHARLTON, KENT.—  
H. L. Bernays.
- CHARTHAM, KENT.—  
G. C. Fitz-Gerald.
- CHEDDAR, SOMERS.—  
R. W. Statham.
- CHELTENHAM, GLOUC.—  
G. C. J. Phillips, E. G. Trevithick.
- CHESTER.—  
J. Duff.
- CHEW MAGNA, SOMERS.—  
G. W. F. Bury.
- CHICHESTER, SUSSEX.—  
R. A. L. Hill.
- CHIPPING CAMPDEN, GLOUC.—  
J. H. Dewhurst.
- CHIPPING NORTON, OXF.—  
A. Turle.
- CHISWICK, MIDDLESEX.—  
G. V. Benson, J. G. Jeffreys, R. Podmore.
- CHRISTCHURCH, HANTS.—  
H. T. H. Mead, L. V. Tebbs.
- CHUDLEIGH, DEVON.—  
H. H. L. Patch.
- CHURCH STRETTON, SALOP.—  
H. Barnett.
- CLACTON-ON-SEA, ESSEX.—  
P. Coleman.
- CLEETHORPES, LINC.—  
J. K. Pickford.
- CLEOBURY MORTIMER, SALOP.—  
F. H. Thompson.



CLIFTON, GLOUC.—  
J. M. Clarke, D. S. Davies, N. C. Dobson, A. N. G. Gibbs, J. Gill, J. C. Heaven, S. Morgan.

CLITHEROE, LANC.—  
A. W. Musson, W. E. Musson.

COBHAM, SURREY.—  
J. L. W. Kitching.

COLCHESTER, ESSEX.—  
A. Chopping, H. Laver, J. W. Laver, P. G. Laver, W. A. Maybury, E. G. Renny.

COLNE, LANC.—  
J. J. Ideson.

COLSTON-BASSETT, NOTTS.—  
W. Windley.

COVENTRY, WARW.—  
F. M. Haig.

COWES, I.W.—  
E. W. Paul.

CRADLEY HEATH, STAFF.—  
T. V. de Denne.

CRANLEIGH, SURREY.—  
J. Wood.

CRAVEN ARMS, SALOP.—  
E. Tredinnick.

CRAWLEY, SUSSEX.—  
T. H. Martin.

CREWE, CHESH.—  
W. Hodgson.

CREWKERNE, SOMERSET.—  
W. W. Webber.

CROOKESMOOR, YORKS.—  
C. S. Kilham.

CROWLAND, LINC.—  
D. C. L. Williams.

CROYDON, SURREY.—  
A. B. Carpenter, T. A. Dukes, G. G. Genge, W. Rosser, T. Slipper, F. R. Walters, R. R. Whishaw, E. H. Willock, W. E. Woodman.

CUCKFIELD, SUSSEX.—  
A. E. Wells.

CULLOMPTON, DEVON.—  
J. H. Potter.

DALTON-IN-FURNESS, LANC.—  
C. Plant.

DARTFORD, KENT.—  
H. Croucher (retired).

DEDDINGTON, OXFORD.—  
H. Saunders.

DEDHAM, ESSEX.—  
C. E. D. Maile.

DERBY.—  
W. H. Allen, W. Benthall, C. A. Greaves, E. C. Green, T. Highton, C. H. Hough, G. S. Sims, J. A. Southern, F. B. Thornton.

DEWSBURY, YORKS.—  
J. Prior.

DIDSBURY, LANC.—  
W. W. Jones.

DONCASTER, YORKS.—  
M. J. Wakefield.

DORCHESTER, DORSET.—  
E. J. Day, A. Emson, W. R. Hanbury.

DORKING, SURREY.—  
C. W. Chaldecott, H. Chaldecott.

DOUGLAS, ISLE OF MAN.—  
A. Haviland.

DOVER, KENT.—  
R. W. Ord.

DOVERCOURT, ESSEX.—  
H. Gurney.

DROITWICH, WORC.—  
T. Corbett.

DROXFORD, HANTS.—  
E. C. Pern.

DUKINFIELD, CHESHIRE.—  
J. R. S. Park.

DUNSTABLE, BEDS.—  
F. W. D. Henslowe.

DURHAM.—  
Rev. J. T. Fowler (retired).

EASTBOURNE, SUSSEX.—  
A. R. Barnes, C. H. H. Cameron.

ECCLESTON, LANC.—  
T. Fisher.

EDMONTON, MIDDLESEX.—  
C. D. Green.

ENDERBY, LEICESTER.—  
W. R. M. Berridge.

ENFIELD, MIDDLESEX.—  
J. J. Ridge.

EPSOM, SURREY.—  
E. G. C. Daniel.

ERITH, KENT.—  
J. C. M. Maynard.

ESHER, SURREY.—  
R. F. Walker.

ETON, BUCKS.—  
E. S. Norris.

EVESHAM, WORC.—  
J. S. Slater.

EXETER, DEVON.—  
H. Andrew, A. Goulston, J. S. Perkins, R. V. Solly.

FAIRFORD, GLOUC.—  
D. Iles.

FAREHAM, HANTS.—  
H. D. Brook.

FELIXSTOWE, SUFFOLK.—  
P. C. Phillips.

FISHPONDS, GLOS.—  
W. R. Thurnam.

FLEET, HANTS.—  
G. H. Wickham.

FLEETWOOD, LANC.—  
W. H. Robinson.

FOLKESTONE, KENT.—  
C. Latter, A. E. Price.

FOWEY, CORNWALL.—  
     R. T. Cann.  
 FULBECK, LINC.—  
     C. J. West.  
 GATESHEAD, DURHAM.—  
     A. Green.  
 GODALMING, SURREY.—  
     W. O. T. Annesley, B. W. Bond,  
     C. W. Haig-Brown.  
 GOUDHURST, KENT.—  
     J. W. Carpenter.  
 GRANGE-OVER-SANDS, LANC.—  
     A. Beardsley.  
 GRAVESEND, KENT.—  
     H. L. Thurnell.  
 GREAT DRIFFIELD, YORKS.—  
     R. B. Eccles, R. Wood.  
 GREAT GLENN, LEIC.—  
     W. T. Crick.  
 GREAT GRIMSBY, LINC.—  
     G. Gresswell.  
 GREAT TORRINGTON, DEVON.—  
     E. Sutcliff, E. H. Sutcliff.  
 GUERNSEY.—  
     E. K. Corbin, M. A. B. Corbin,  
     A. C. Wallace.  
 GUILDFORD, SURREY.—  
     W. B. de Jersey, W. W. Lake,  
     J. Morton.  
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     L. Bostock.  
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     J. F. Rugg.  
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     G. Schilling.  
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     T. Hodson.  
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     Haward, F. W. Mason, J. R.  
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     Wrinch.  
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     Sullivan.  
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     Halliday, M. A. Teale.  
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     G. Clifton, G. C. Franklin, F. J.  
     Lankester, H. Lankester, J. M.  
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     Steeves, E. H. Worth.  
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     F. G. Southern.  
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     G. A. Shackel.  
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     H. J. Cooper.  
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     Shirtliff, W. Tyrrell, W. G. B. Tyrrell.  
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     Hutton, J. Niven, T. Windsor.  
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     J. R. Scott.  
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     G. W. Ord.

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S. G. Morris.  
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Thomas.  
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J. H. Stacy, S. J. Taylor.  
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Okell, W. J. Stephens, C. H.  
White.  
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T. Fort.

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H. T. Jones.  
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Walker, R. Warrener.  
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W. H. Smart.  
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PORTESHAM, DORSET.—  
H. C. March.  
PORTLAND, DORSET.—  
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A. V. Maybury, L. Maybury,  
R. W. Middleton, C. H. Newby,  
R. Slocock, J. L. Vardy, F. W.  
Way, J. H. F. Way, J. P. Way.  
PORTSWOOD, HANTS.—  
L. M. Breton, R. Ives.  
PRESTON, LANC.—  
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S. A. Rigby, E. Sergeant.  
PRESTWICH, LANC.—  
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J. Wiglesworth.  
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O. C. Maurice, W. J. Maurice,  
G. E. Seon.  
REDDITCH, WORC.—  
C. C. Smith.

REDHILL, SURREY.—  
E. Bromet.

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C. Hoar.

ROBIN HOOD'S BAY, YORKS.—  
R. Wood.

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ROCHESTER, KENT.—  
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RUARDEAN, GLOUC.—  
H. W. Mills.

RUGBY, WARW.—  
C. Dukes, B. Relton.

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A. Banks, H. Smith (retired).

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SOUTH MOLTON, DEVON.—  
H. J. Smyth.

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STOCK, ESSEX.—  
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     Groome.  
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     Swinhoe.  
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     foord, R. H. West.  
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     W. R. Carter.  
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     E. H. Davis.

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A. Purkiss.  
WOLVERHAMPTON, STAFF.—  
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A. W. F. Sayres.  
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WOOTTON-BASSETT, WILTS.—  
F. G. Wride.  
WORCESTER.—  
M. J. H. Sayers.  
WORCESTER PARK, SURREY.—  
H. J. Carstairs.  
WORKSOP, NOTTS.—  
A. J. H. Montague.  
WREXHAM, DENBIGH.—  
H. V. Palin.  
WRINGTON, SOMERSET.—  
H. C. Bristowe.

WYKE, YORKS.—  
W. P. Hilliam.  
YALDING, KENT.—  
E. J. Wood.  
YARMOUTH, NORF.—  
H. Collier.  
YEADON, YORKS.—  
T. S. Usher.  
YEALAND CONYERS, LANC.—  
Rev. J. Mitchell.  
YORK.—  
W. A. Evelyn, A. W. Metcalfe,  
F. H. Weekes.

## SCOTLAND.

ABERDEEN.—  
R. W. Reid, C. H. Usher.  
DUMFRIES.—  
W. D. Grieve.  
EDINBURGH.—  
T. W. Drinkwater, W. S.  
Greenfield, G. C. Purvis.  
GLASGOW.—  
R. D. MacGregor, D. Sinclair.  
POLMONT, STIRLING.—  
T. H. Lawrie.  
STRANRAER, WIGTOWN.—  
T. Easton.

## IRELAND.

BAGNALSTOWN, CARLOW.—  
J. J. Norton.  
BELFAST.—  
W. Calwell, R. C. McCullagh.  
DOWNPATRICK, DOWN.—  
W. Ranson.  
DUNMURRY, ANTRIM.—  
D. P. Gaussen.  
KILLARNEY, KERRY.—  
G. Stoker.  
KNOCK, ANTRIM.—  
J. K. Kerr.  
LARNE, ANTRIM.—  
D. P. S. Hill.

## FRANCE.

CANNES.—F. W. Giles.  
NEUILLY-SUR-SEINE.—E. E. Barret.  
VUE.—H. de Fonmartin.

## GERMANY.

BERLIN.—L. O. J. Ahlswede.

## GIBRALTAR.

J. E. Ker.

## ITALY.

BORDIGHERA.—H. Danvers.  
SAN REMO.—A. J. Freeman.

## MALTA.

VALETTA.—A. E. Mifsud.

**MONACO.**

W. A. Fitzgerald.

**CHINA.**

HONG KONG.—A. M. Cowie, Ho Kai.

**INDIA.**

AMRITSUR.—A. C. Lankester.  
 BARODA.—E. R. Dadachanji.  
 BHAGALPUR.—P. A. Rigby.  
 BOMBAY.—D. R. Wadia.  
 CALCUTTA.—W. Coulter, J. E. Panioty.  
 CINNAMARA.—J. Hewan.  
 HYLAKANDY.—D. Taylor.  
 KADUR.—A. S. Fernandes.  
 KARACHI.—S. M. Kaka.  
 LAHORE.—W. Forrester.  
 MANNARGUDI.—H. Hudson.  
 MUKTESAR.—A. Lingard.  
 NAZIRA.—C. E. Caudle.  
 QUETTA.—S. W. Sutton.  
 SAVANTVADI.—D. G. Dalgado.  
 SIMLA.—S. James.

**JAPAN.**

SHICHŌME.—M. Takayasu.  
 TOKIO.—K. Hayashi, Y. Saneyoshi,  
 S. Suzuki, K. Takaki, K. Totsuka.

**STRAITS  
SETTLEMENTS.**

PENANG.—Hon. W. C. Brown.  
 SILENSING.—J. D. Gimlette.  
 SINGAPORE.—M. F. Simon.

**TURKEY IN ASIA.**

BAGDAD.—H. M. Sutton.  
 JERUSALEM.—P. C. E. D'E. Wheeler.

**CAPE COLONY.**

CAPE TOWN.—F. J. Parson, W. T.  
 Pauling, C. Robertson, A. M.  
 Wilson.  
 CRADOCK.—P. C. de Wet, A. King.  
 KIMBERLEY.—W. S. Griffith.  
 RONDEBOSCH.—E. S. Stevenson.  
 UMTATA.—Rev. F. W. Sutton.  
 VICTORIA WEST.—G. B. S. Darter.  
 WOODSTOCK.—A. W. Caporn.

**EGYPT.**

CAIRO.—H. M. N. Milton, F. M.  
 Sandwith.  
 PORT SAID.—F. R. S. Milton.

**GOLD COAST.**

ACCRA.—E. Mattei.  
 LAGOS.—Prince Orisadipe, O. Sapara.

**MADEIRA.**

M. C. Grabham.

**MATABELELAND.**

GWANDA.—W. Redpath.

**NATAL.**

DURBAN.—L. A. J. Rouillard.  
 ISIPINGO.—F. W. Greene.

**ORANGE FREE STATE.**

BLOEMFONTEIN.—Rt. Rev. J. W. Hicks.

**TRANSVAAL.**

JOHANNESBURG.—A. D. Bensusan,  
 M. J. Longinotto, W. J. V. Rowe.  
 LYDENBURG.—W. Stokes.  
 PRETORIA.—T. L. Laxton.  
 UGANDA.—A. D. McKinnon.

**CANADA.**

HALIFAX.—M. Chisholm.  
 INNISFAIR.—H. George.  
 KAMLOOPS.—T. W. Lambert.  
 LONDON.—J. Wishart.  
 MONTREAL.—C. R. Gillard, H. L.  
 Reddy, F. J. Shepherd.  
 NEW WESTMINSTER.—G. F. Bodington.  
 PETERBOROUGH.—D. Fraser.  
 ST. JOHN.—F. P. Taylor.  
 STANHOPE.—W. T. Ward.  
 TORONTO.—W. H. Aikins, A. M.  
 Baines.  
 VANCOUVER.—D. B. Irving, G. D.  
 Johnston.  
 VICTORIA.—C. F. Newcombe.  
 WINNIPEG.—J. W. Good.

**NEWFOUNDLAND.**

PILLEY'S ISLAND.—R. F. Hiley.  
 ST. JOHN'S.—F. A. Stabb.

**UNITED STATES.**

CHICAGO.—W. Pocock.  
 COLORADO SPRINGS.—S. E. Solly.  
 HARTFORD, CONN.—J. W. Booth.  
 LOS ANGELES, CALIF.—E. J. Cowen,  
 J. Ellis.  
 SAN FRANCISCO.—W. E. Ledyard.  
 SYRACUSE.—F. W. Marlow.

**WEST INDIA ISLANDS.**

ANTIGUA.—F. E. Forward.  
 BARBADOS.—R. B. Walcott.  
 BERMUDA.—E. Harvey.  
 JAMAICA.—J. L. C. Cox, M. Grabham,  
 T. P. Madden.  
 TRINIDAD.—W. F. Cleaver, R. H. E.  
 Knaggs, S. F. Proctor, A. A.  
 Rostant.

**CHILI**

LAGUNAS.—G. F. Cooper.

**FIJI.**

BA.—G. W. A. Lynch.

SUVA.—B. G. Corney.

**NEW SOUTH WALES.**

ANNANDALE.—J. B. McIlroy.

ASHFIELD.—J. F. Deck.

COOTAMUNDRA.—W. Hull.

GRAFTON.—M. H. Webster.

HILLEND.—C. Mattei.

HILLGROVE.—H. M. Massey.

LYNTONSTOWE.—T. R. Lewers.

NEWCASTLE.—J. Stride.

RICHMOND.—W. M. Helsham.

SUMMERHILL.—A. E. Ronald.

SYDNEY.—R. J. Boyd, A. A. Cohen,

C. J. Martin, W. L. Mathias,  
J. W. B. Wades.

**NEW ZEALAND.**

AMBERLEY.—G. W. Fitz-Henry.

AUCKLAND.—A. E. Marsack.

BLENHEIM.—G. Cleghorn.

BRIGHTWATER.—E. D. Dunn.

HAMILTON.—A. S. Brewis.

HASTINGS.—R. Nairn

NAPIER.—H. F. Bernau.

NEW PLYMOUTH.—H. B. Leatham.

WELLINGTON.—G. E. Anson.

**QUEENSLAND.**

LONGREACH.—H. S. Lindsay.

NORMANTON.—W. E. Roth.

SOUTHPORT.—A. B. Brockway.

TOOWOOMBA.—C. R. M. Woodward.

WARWICK.—A. O. H. Phillips.

**SOUTH AUSTRALIA.**

ADELAIDE.—L. W. Bickle, J. Hanson,  
E. W. Morris, B. Poulton.

AUBURN.—F. H. Furnival.

KENSINGTON.—S. Warren.

MOONTA.—J. W. Keyworth.

PARKSIDE.—H. A. Sweetapple.

**VICTORIA.**

BALLARAT.—H. H. Radcliffe.

BRIGHTON.—C. F. Coxwell.

CAMPERDOWN.—A. J. W. Pettigrew.

GEELONG.—S. R. Robinson.

MELBOURNE.—H. B. Forster, A. J. R.  
Lewellin, S. Plowman, J. F. Rudall,  
J. T. Rudall, G. Shirres.

ST. KILDA.—E. L. Simmons.

WARRNAMBOOL.—H. L. Miller.

**WESTERN  
AUSTRALIA.**

CUE.—W. J. Olivey.

FREMANTLE.—H. J. Lotz.

KATAUNING.—F. M. House.

MARBLE BAR.—H. W. Nix.

PERTH.—E. Scott.

# Medical Officers of the Naval, Military, and Indian Services.

ADDISON, C. J. Surg.-Maj. Army.  
 ALPIN, W. G. P. Surg.-Maj. I.M.S. Bengal.  
 ARCHER, S. A. Surg.-Lt. Army.  
 AVETOOM, S. T. Surg.-Maj. I.M.S. Bombay.  
 BARKER, F. R. Surg.-Maj. Army.  
 BATE, G. Surg. R.N. Retired.  
 BENT, G. Surg.-Capt. Army.  
 BOULGER, I. Surg.-Maj. Army.  
 BRAKE, J. Surg.-Gen. I.M.S. Retired.  
 BURDEN, H. Surg.-Lt. I.M.S. Bengal.  
 BUTTERWORTH, S. Surg.-Maj. Army.  
 CALVERT, J. T. Surg.-Capt. I.M.S. Bengal.  
 CAMERON, C. Surg.-Lt.-Col. I.M.S. Bengal. Retired.  
 CARR-WHITE, P. Surg.-Capt. I.M.S. Madras.  
 CHEVERS, H. L. G. Surg.-Capt. Army.  
 CLARKSON, F. C. Surg.-Capt. I.M.S. Bengal.  
 CLARKSON, J. W. Surg.-Lt.-Col. I.M.S. Bombay.  
 COAD, J. E. Surg. R.N.  
 COLMAN, G. M. H. Surg.-Maj. Army. Retired.  
 COOKSON, H. Surg.-Maj. I.M.S. Bengal. Retired.  
 CORNWALL, J. W. Surg.-Lt. I.M.S.  
 COWEN, W. A. D. Surg.-Maj. Army.  
 DE LOM, H. A. Surg.-Capt. Army.  
 DEWES, F. J. Surg.-Capt. I.M.S. Madras.  
 DICKERSON, S. H. Brig.-Surg. Army. Retired.  
 DICKSON, H. A. D. Surg.-Lt. I.M.S. Bengal.  
 DURANT, R. J. A. Surg.-Capt. Army.  
 DURSTON, J. C. Surg. R.N.  
 EARLE, H. E. L. Surg. R.N. Retired.  
 EDYE, J. S. Surg.-Capt. Army.  
 FAWSETT, R. Surg.-Lt. Army.  
 FISHER, J. Surg.-Lt. I.M.S. Bengal.  
 FLETCHER, W. B. Fleet-Surg. R.N. Retired.  
 FOOTNER, E. Brig.-Surg. Army. Retired.  
 FREEMAN, E. C. Surg.-Capt. Army.  
 GABBETT, P. C. Surg.-Capt. I.M.S. Madras.  
 GIMLETTE, G. H. D. Surg.-Maj. I.M.S. Bengal.  
 GIMLETTE, T. D. Fleet-Surg. R.N.  
 GRAY, C. Surg.-Maj. Army. Retired.  
 GROSE, S. Staff-Surg. R.N. Retired.  
 HAINES, E. Surg. R.N.  
 HAKIM, H. M. Surg.-Maj. I.M.S. Madras.  
 HALL, J. L. Surg.-Maj. Army.  
 HARRIS, F. A. Surg.-Maj. Army.  
 HEATHER, B. G. Surg. R.N.  
 HOOPER, A. W. Surg.-Lt. Army.  
 HUNT, J. P. Surg.-Maj. Army.

HUSKINSON, H. Surg. R.N.  
 ILLINGWORTH, J. A. Brig.-Surg. Army. Retired.  
 JAMES, C. H. Surg.-Capt. I.M.S. Bengal.  
 JULIUS, H. A. Surg. R.N.  
 KING, A. F. W. I.M.S.  
 LANCASTER, J. Surg.-Lt.-Col. I.M.S. Madras.  
 LONDON, E. A.M.S. Retired.  
 LEWTAS, J. T. Surg.-Lt.-Col. I.M.S. Bengal.  
 LIGHTFOOT, W. S. Staff-Surg. R.N.  
 LUARD, H. B. Surg.-Capt. I.M.S. Bengal.  
 McDONNELL, J. O'M. Surg.-Lt.-Col. I.M.S. Bengal. Retired.  
 MANLEY, W. G. N., C.B., V.C. Surg.-Gen. Army. Retired.  
 MATURIN, B. A. Surg.-Capt. Army.  
 MICHAEL, H. J. Surg.-Maj. Army.  
 MOORE, H. M. Surg.-Lt. I.M.S. Bombay.  
 MOORES, S. G. Surg.-Capt. Army.  
 NAUTH, B. Surg.-Lt. I.M.S. Madras.  
 OWEN, C. W., C.I.E., C.M.G. Surg.-Maj. I.M.S. Bengal.  
 PERRY, E. L. Surg.-Lt. I.M.S. Bengal.  
 PINTO, J. O. Surg.-Capt. I.M.S. Madras.  
 POYNDER, G. F. Surg.-Maj. Army.  
 PRALL, C. B. Surg.-Capt. I.M.S. Bengal.  
 REILLY, C. C. Surg.-Maj. Army.  
 ROBINSON, G. W. Surg.-Maj. Army.  
 ROBINSON, S. C. B. Surg.-Maj. Army.  
 ROCK, C. H. Surg. R.N.  
 ROE, E. A. H. Surg.-Lt.-Col. Army. Retired.  
 RORIE, J. Dep.-Insp.-Gen. R.N. Retired.  
 SARKIES, S. C. Surg.-Maj. I.M.S. Madras.  
 SINGH, B. J. Surg.-Capt. I.M.S., Bengal.  
 SKARDON, T. G. Brig.-Surg. I.M.S. Bengal. Retired.  
 SLAUGHTER, C. H. Insp.-Gen. R.N. Retired.  
 SLAUGHTER, W. B. Surg.-Lt.-Col. Army.  
 STADDON, H. E. Surg.-Lt. Army.  
 TODD, H. J. Mc C. Staff-Surg. R.N.  
 TREVOR, H. O. Surg.-Maj. Army.  
 WHISTON, P. H. Surg.-Capt. Army.  
 WILES, J. Dep.-Surg.-Gen. Army. Retired.  
 WILLIAMS, A. H. Surg.-Lt.-Col. I.M.S. Bengal.  
 WILLIS, C. F. Surg.-Maj. I.M.S. Bombay.  
 WOODHOUSE, T. P. Surg.-Maj. Army.  
 WRIGHT, E. H. Surg.-Capt. I.M.S. Madras.  
 WYSARD, A. T. Surg. R.N.



# ALPHABETICAL LIST OF OLD STUDENTS OF ST. THOMAS'S HOSPITAL.

*(The date indicates the year of entry.)*

- ABBOTT, C. E. (1874). The Shrapnels, Taunton.
- ABBOTT, F. C. (1884). St. Thomas's Hospital. B.Sc., M.B., M.S. Lond., F.R.C.S.  
w 1884-5. 1st Year Student, 1st Entrance Science Scholarship, The Wm. Tite Scholarship.  
s 1885. 1st Year Student, 1st Coll. Prize.  
w 1885-6. 2nd Year Student, The Peacock Scholarship.  
w 1886-7. 3rd Year Student, 2nd tenure of Peacock Scholarship with 1st Coll. Prize.  
w 1887-8. 4th Year Student, The Cheselden Medal;  
Treasurer's Gold Medal.  
H.P., H.S., A.H.S., Demonstrator of Anatomy Surgical Registrar and Resident Assistant Surgeon.
- ABEL, H. M. (1888). Cecil House, Somerset Street, Savoy. B.A. Oxon.
- ACHARD, A. L. (1880). 9, Blandford St., Manchester Square. M.D. Brux.
- ACKERLEY, R. (1885). Croft House, The Hill, Surbiton, Surrey. M.A., M.B., B.Ch. Oxon.
- ACLAND, T. D. (1876). 74, Brook St., Grosvenor Square. M.A., M.D. Oxon.; F.R.C.P. Lond.; Physician, St. Thomas's Hospital; Physician, Brompton Hospital.  
w 1877-8. 3rd Year Physical Society's Prize. Paper published in Hospital Reports, Vol. VIII.  
w 1878-9. 4th Year Student, Mead Medal. Demonstr. of Pract. Med., Morb. Histol. and Pract. Physiol., H.S., H.P., R.A.
- ADAMS, E. J. (1863). Crow Tree House, Sheffield.
- ADAMS, W. (1840). 7, Loudoun Road, St. John's Wood. F.R.C.S.; Con. Surg. Gt. North. Cent. Hosp., Nat. Hosp. for Paral. and Epilep., and Nat. Orthop. Hosp.
- ADAMS, W. (1859). Fore Street, St. Clement's, Ipswich.
- ADDISON, C. J. (1872). Surg.-Maj. Army.
- ADDY, B. (1868). Stretton, Weld Road, Birkdale, Southport. M.D. Lond.  
1869. 1st Year Student, 1st Coll. Prize;  
Physical Society's 1st Year's Prize.  
1870. 2nd Year Student, 1st Coll. Prize;  
Physical Society's 2nd Year's Prize.  
1871. 3rd Year Student, 1st Coll. Prize;  
Prosecutor's Prize;  
Treasurer's Gold Medal.  
R.A., H.P.
- ADKINS, A. J. (1884). Lambeth Infirmary. M.D. Lond.  
Clin. Asst. Skin Dept.
- ADKINS, P. R. (1888). "Rathcoole," Ferndale Road, Clapham. M.D., B.S. Durham.
- ADYE, W. J. A. (1880). Church House, Bradford-on-Avon, Wilts.
- AHLWEDE, L. O. J. (1897). Berlin. M.D. Freiburg.
- AIKINS, W. H. (1881). Wellesley Street, Toronto, Canada.
- AIR, A. C. (1863). 223, Selhurst Road, South Norwood.
- ALLCOCK, G. (1892). The Birches, Inwood Road, Hounslow.
- ALLDEN, S. J. (1890). 32, West Allington, Bridport. M.D., B.S. Durham.
- ALLEN, W. H. (1890). Stuart Villa, Harrington Street, Derby. B.A., M.B., B.C. Cantab.
- ALLINGHAM, J. H. (1858). 54, Hillier Road, New Wandsworth.
- ALLINGHAM, W. (1851). 59, Marina, St. Leonards-on-Sea. F.R.C.S.  
1854. Descriptive Anatomy, Prize;  
Surgery, Prize.  
1855. Medicine, Prize;  
Clinical Medicine, President's Prize;  
Clinical Medicine, Treasurer's Prize.  
Surgical Tutor, Demonstrator of Anatomy, and Surgical Registrar.
- ALLIOTT, A. J. (1869). Rosendal, Sevenoaks, Kent. B.A., M.D. Cantab.

- ALPIN, W. G. P. (1877). Surg.-Maj. Bengal Army. M.D. Brux. Demonstr. of Pract. Surg.
- ANDERSON, G. R. (1883). 18, Hoghton Street, Southport. F.R.C.S. R.A., A.H.P.
- ANDERSON, H. B. (1858).
- ANDERSON, J. R. (1883).
- ANDERSON, M. J. B. (1889). 120, Lavender Hill.
- ANDERSON, W. (1864). 2, Harley St., Cavendish Square. F.R.C.S.; Surgeon, Lect. on Anat., and Surg. Skin Departm., St. Thomas's Hospital; Professor of Anatomy to the Royal Academy, Consulting Surgeon to the Hampstead General Hospital and Sevenoaks Hospital for diseases of the Hip, Member of the Court of Examiners at the Royal College of Surgeons; Exam. in Surg. Univ. Lond., and Conjoint Board.  
1865. 1st Year Student, 3rd Coll. Prize.  
1866. 2nd Year Student, 3rd Coll. Prize.  
1867. 3rd Year Student, 1st Coll. Prize;  
Physical Society's 3rd Year's Prize;  
Cheselden Medal.  
Surg. Registr., Demonstrator of Anatomy. H.S. R.A.
- ANDRÉ, J. E. F. (1886). The Gorse, Sidlesham, Chichester.
- ANDREW, H. (1884). House Surg., Devon and Exeter Hosp., Exeter.
- ANDREWS, C. H. (1880). Willow Lane, Norwich.
- ANDREWS, R. (1879). Chestnut Grove, New Malden, Surrey.
- ANNESLEY, W. O. T. (1871). Sandy Road, Godalming, Surrey.
- ANNESS, F. R. (1877). 32, Berners Street, Ipswich.
- ANSON, G. E. (1886). The Terrace, Wellington, New Zealand. M.D., B.C. Cantab. H.S., A.H.S., R.A.
- ANTHONY, T. G. (1842). Tredegar, Monmouthshire.
- APPLETON, G. (1842). Park Braws, Lizard, Helston, Cornwall (retired).
- APPLETON, H. (1838). 21, Elmdale Road, Tyndall's Park, Bristol (retired). M.D. Aberd.
- APPLEYARD, F. E. (1891). Savile House, Halifax. B.A., M.B., B.C., Cantab. Clin. Asst. Throat Dept.
- ARCHER, S. A. (1893). Surg.-Lt. Army.
- ARMSTRONG, H. G. (1871). Wellington College, Berks.  
w 1874. 3rd Year Student, 3rd Coll. Prize.
- ARNISON, W. D. (1887). 31, Oxford Street, Newcastle-on-Tyne. M.D., B.S. Durham.
- ARNOLD, E. G. E. (1888). 225, Cromwell Mansions. M.B., B.S., Durh. Obst. H.P.
- ARNOLD, G. J. (1888). F.R.C.S. Surg. P. & O. H.S., A.H.S., Clin. Asst. Throat Dept.
- ASHE, W. P. (1872). 23, Cadogan Gardens, Chelsea. M.D. Durh.
- ASHFORD, W. (1890).
- ATKEY, P. J. (1885). 50, Bellevue Road, Southampton. D.P.H. Camb. Late Surg. P. & O. H.S., A.H.S., Clin. Asst. Throat, Ear and Skin Depts.
- ATKINSON, A. E. (1894). 3, Southampton Street, Strand. D.P.H.
- ATKINSON, F. P. (1860). Claremont Road, Surbiton, Surrey. M.D., C.M., Aberd.; M.R.C.P. Edin.
- AUBIN, T. J. (1854). 39, La Motte Street, St. Helier's, Jersey. M.D. St. And.
- AVELING, C. T. (1862). The Oaklands, Upper Clapton. M.D., M.S. Lond.; F.R.C.S.  
1863. Matriculation Examination — Physics and Natural History, 1st Coll. Prize;  
1st Year Student, 1st Coll. Prize.  
1864. 2nd Year Student, 2nd Coll. Prize.  
1865. 3rd Year Student, 3rd Coll. Prize. H.S.
- AVETOOM, S. T. (1876). Surg.-Maj. Bombay Army.
- BABINGTON, S. N. (1892).  
s 1894. 2nd Year Student, 1st Coll. Prize. A.H.S.
- BAINES, A. M. (1878). Toronto, Canada.
- BAKER, A. (1891). 134, York Road, Lambeth. M.B., B.S. Durham.
- BAKER, W. H. (1880). 152, Westbourne Grove.
- BALLANCE, C. A. (1875). 106, Harley St., Cavendish Square. M.B., M.S. Lond.; F.R.C.S.; Assistant Surgeon, Surgeon for Diseases of the Ear, and Teacher of Practical Surgery, St. Thomas's Hospital, Assistant Surgeon to the Hospital for Sick Children, Great Ormond Street; Surg. National Hosp., Queen Square.  
w 1876-7. 3rd Year Student, 3rd Coll. Prize, and Physical Society's 3rd Year's Prize.  
1880. The Solly Medal and Prize. Surgical Registrar, Demonstrator of Anatomy H.P., H.S., A.H.S., A.H.P., R.A.
- BALLANCE, J. DES C. (1881). 155, Hagley Road, Edgbaston, Birmingham. R.A.

- BANHAM, Rev. H. F. (1870). Tudendenham Vicarage, Ipswich (retired). M.A., M.D. Cantab.
- BANHAM, W. W. (1882). 147, Abbeydale Road, Sheffield.
- BANKS, A. (1887). 1, Lind Terrace, Ryde, Isle of Wight. F.R.C.S., D.P.H.  
w 1887-8. 1st Year Student, 1st Coll. Prize.  
s 1890. 3rd Year Student, 2nd Coll. Prize.  
w 1890-1. 4th Year Student, The Cheselden Medal.  
H.S., A.H.S., Asst. Demonstr. of Pract. Surg., Clin. Asst. Skin Dept., Jun. and Sen. Obst. H.P.
- BARBER, H. V. (1878). 130, Queen's Road, Finsbury Park. M.A. Cantab.
- BARKER, E. M. (1892). The Rookery, Broomhall Park, Sheffield. B.A., M.B., B.C. Cantab.
- BARKER, F. (1884). Heighington, Linc.
- BARKER, F. R. (1872). Surg.-Maj., Army. M.B. Lond., D.P.H.
- BARNES, A. R. (1869). Meads Place, Meads, Eastbourne, Sussex. M.D. Edin.
- BARNES, R. Conservative Club, and Lingwood, Liss, Hants (retired). M.D., F.R.C.P. Lond.; Luml. Lect.; Censor; F.R.C.S.; F.R.C.P.I. (Hon.). Formerly Obst. Phys. and Lect. on Obst. Lond., St. Thos. and St. Geo. Hosps., and Exam. Univ. Lond., R.C.P. Lond., and R.C.S. Eng.
- BARNES, R.S.F. (1870). 7, Queen Anne Street, Cavendish Square. M.D., C.M. Aberd.; M.R.C.P. Lond., F.R.S.E. Sen. Phys. Roy. Matern. Charity.
- BARNETT, H. (1883). Burway House, Church Stretton, Salop. M.A., M.B., B.C. Cantab.
- BARON, T. (1863). Ulceby, Linc. H.S.
- BARRACLOUGH, H. C. (1891). London Road South, Lowestoft. B.A., M.B., B.C. Cantab.
- BARRET, E. E. II, Rue de l'Hotel de Ville, Neuilly, Paris, France. M.D. Brux., M.D. Paris.
- BARRETT, J. J. (1859). 170, Ramsden Road, Balham. M.D. St. And.
- BARRS, J. H. (1885). 6, Wandsworth Bridge Road, Fulham.
- BARTON, P. F. (1894). The Rowans, Lingfield Road, Wimbledon. B.A. Cantab.
- BARWELL, R. (1845). 55, Wimpole Street, Cavendish Square. F.R.C.S.; Consulting Surgeon to Charing Cross Hospital.  
1850. Clinical Medicine, Prize.  
H.S., Demonstr. of Anat.
- BASHALL, C. E. (1884). Lower Knole, Kingsbridge, Devon.
- BATE, G. (1871). Late Surg. R.N.
- BATHURST, L. (1881). Oswald Road, Oswestry.
- BATTLE, W. H. (1873). 2, Mansfield Street, Cavendish Square. F.R.C.S., Asst. Surgeon St. Thomas's Hospital and Surgeon Royal Free Hospital.  
w 1875. 2nd Year Student, 3rd Coll. Prize.  
w 1876-7. 3rd Year Student, The First Solly Medal and Prize.  
Resident Assistant Surgeon, Surgical Registrar, H.S., H.P., A.H.P., R.A.
- BATTYE, J. H. (1872). 84, Belgrave Road. M.D.R.U.I. A.H.P.
- BAXTER, S. E. (1885). 87, Talfourd Road, Camberwell.
- BAYLISS, R. A. (1884). Royal Mineral Water Hospital, Bath.
- BEARDSLEY, A. (1843). The Towers, Grange-over-Sands, Lanc.
- BEDDOES, T. P. (1882). 26, North Parade, Aberystwith. B.A., M.B., B.C. Cantab.; F.R.C.S.  
Clin. Asst. Skin Dept.
- BEDFORD, C. F. (1864). New Sleaford, Linc.
- BEDFORD, R. J. (1855). Kegworth, Leic. R.A.
- BELL, C. W. J. (1878). 61, Ugate, Louth, Linc.
- BELL, E. S. (1883). Asst. Med. Off. St. Olave's Union Infirm., Lower Road, Rotherhithe.
- BELL, J. A. (1865). Deravona, Watts' Avenue, Rochester, Kent. H.S., R.A.
- BELL, J. V. (1858). Star Hill, Rochester, Kent. M.D. St. And., F.R.C.S. H.S., R.A.
- BENINGTON, R. C. (1872). M.D., B.S., L.S.Sc. Durh.; Med. Tutor Univ. Durh. Coll. of Med.  
H.P., A.H.P., R.A.
- BENNETT, A. W. 6, Park Village East, Regent's Park. M.A., B.Sc. Lond. Lecturer on Botany.
- BENNETT, H. S. (1868). 53, Upper Berkeley Street, Portman Square, and 2, Birchin Lane. M.B. Cantab. R.A.
- BENNETT, W. G. (1892). Banavie, London Road, Worcester.
- BENSLEY, E. C. (1858). 127, Fellows Road, South Hampstead. F.R.C.S.
- BENSON, G. V. (1888). 13, Queen Anne's Grove, Bedford Park, Chiswick. M.A. Cantab.
- BENSUSAN, A. D. (1887). Johannesburg. M.D. Brux.
- BENT, G. (1879). Surg.-Capt., Army.

- BENTHALL, W.** (1877). 102, Friar Gate, Derby. B.A., M.B. Cantab.
- BERNAU, H. F.** (1885). Napier, New Zealand.  
Clin. Asst. Throat Dept.
- BERNAYS, A. V.** (1875). Solihull, Warwk. B.A., M.B. Cantab.  
w 1880-1. 3rd Year Student, 1st Coll. Prize.
- BERNAYS, H. L.** (1871). Rivoli, Old Charlton, Kent.  
w 1873. Prosector's Prize.
- BERNAYS, S. A.** (1870). Church House, 185, St. Leonard's Road, Bromley by Bow.
- BERRIDGE, W. R. M.** (1884). Enderby, near Leicester.
- BEVILLE, F. W.** (1884). 19, New Cavendish Street.  
Clin. Asst. Skin Dept.
- BIBBY, J.** (1876). Withy House, Bamber Bridge, Lanc.
- BICKLE, L. W.** (1877). North Terrace, Adelaide, S. Australia. F.R.C.S. Edin.  
s 1878. 1st Year Student, 3rd Coll. Prize.  
s 1879. 2nd Year Student, 1st Coll. Prize.  
H.P.
- BIDDLE, D.** (1859). Charlton Lodge, Kingston-on-Thames.  
1860. 1st Year Student, Treasurer's Prize ;  
H.S. Matriculation Exam., Prize.
- BIDWELL, L. A.** (1882). 59, Wimpole Street, Cavendish Square. F.R.C.S. H.S., A.H.S.
- BIGGAM, W.** (1886). 25, Foyle Street, Sunderland. M.A., M.B. Durh.
- BIGGER, W. G.** (1883). Aberfoyle, Streatham Common. B.A.R.U.I., M.B., M.Ch.
- BILLSON, C.** (1887).
- BINCKES, F. W.** (1891). Hill Side, Overhill Road, East Dulwich.  
Clin. Assist. Electrical Dept.
- BIRD, G. W. H.** (1890). Bridgwater, Som. B.A., M.B., B.C. Cantab.  
H.P., Clin. Asst. Skin Dept.
- BIRD, W. V.** (1870). 4, Eaton Villas, West Brighton (retired). M.D. Aberdeen, M.R.C.P.
- BLABER, P. L.** (1890). 34, Cromwell Road, Hove, Sussex.  
Obst. H.P., Clin. Assist. Throat Depart.
- BLACK, J.** (1870). The Avenue, Beulah Hill, Norwood. B.A., M.B. Cantab., F.R.C.S., Lect. on Anat. Westm. Hosp.  
w 1872. 2nd Year Student, Prosector's Prize.  
H.S.
- BLACK, W. S.** (1854). Stockland, Honiton, Devon.
- BLACKER, A. B.** (1879). 15, West Eaton Place, Eaton Square. M.D., B.S. Durh. Supt. of the X Ray Dept. St. Thomas's Hospital ; Tel.: Sciomancy.  
Clin. Asst. Ear, Throat and Electrical Depts.
- BLADES, C. C.** (1853). 171, Kennington Park Road. M.D. St. And.
- BLAIKIE, A. B.** (1885). Oswestry, Salop. M.A., M.B., B.C. Cantab.
- BLAIR, C. S.** (1889). Fulwood, Kew Gardens, Surrey. M.D. Durh.
- BLAKE, T. W.** (1857). Hurstbourne, Bournemouth, Hants. M.D. St. And.
- BLAKEMAN, C. J.** (1885). Res. Med. Off., City Hosp., South Grafton Street, Liverpool.
- BLOUNT, G. B. C.** (1889). Metropolitan Hospital, Kingsland Road.  
Clin. Asst. Ear and Electr. Depts.
- BLUNSOM, J.** (1873).
- BLUNT, A. H.** (1884). 19, St. Nicholas Street, Leicester.
- BODINGTON, G. F.** (1885). Provincial Asyl., New Westminster, British Columbia. M.D. Durh. ; M.R.C.P. Lond., F.R.C.S.
- BOND, B. W.** (1886). The Priory, Godalming. M.B., B.S. Durh.
- BOND, C. K.** (1879). D.P.H.
- BOND, W. A.** (1884). Holborn Town Hall. M.A., M.D., B.C., D.P.H. Cantab., M.R.C.P.  
R.A., Clin. Asst. Throat Dept.
- BOOTH, E. J. H.** (1865).
- BOOTH, J. W.** (1863). Hartford, Connecticut, U.S.A.
- BOSTOCK, L.** (1891). Merefield House, Haslington, Crewe.
- BOTT, W. G.** (1871). 61, Kennington Park Road. J.P.
- BOUCK, J. A.** (1887). 447, Battersea Park Rd.
- BOULGER, I.** (1869). Surg.-Maj., Army.  
1870. 1st Year Student, Sir Wm. Tite's Scholarship.  
1871. 2nd Year, Sir Wm. Tite's Scholarship.  
w 1872. 3rd Year, Sir Wm. Tite's Scholarship.  
H.S., R.A.
- BOWEN, R. E. A.** (1874). 285, Cambridge Road, Bethnal Green



- BOWRING, W. A. (1887). The Cottage, Lovelace Road, Surbiton.  
H.P., Jun. and Sen. Obst. H.P.
- BOX, C. R. (1884). St. Thomas's Hospital. M.D., B.S., B.Sc. Lond., M.R.C.P., F.R.C.S., Resident Assist. Physician.  
w 1885-6. 1st Year Student, 2nd Coll. Prize.  
H.S., A.H.S., Res. H.P., Clin. Asst. Ear Dept., Medical Registrar and Demonstr. of Practical Medicine.
- BOYCOTT, A. N. (1884). Asst. Med. Off. Lond. Co. Asyl., Cane Hill, Purley, Surrey. M.D. Lond.  
H.S., A.H.S., R.A., Clin. Asst. Skin Dept.
- BOYD, R. J. (1873). Sydney, New South Wales.
- BOYER, J. J. W. R. (1866). M.D. Heidelb.
- BOYS, A. H. (1871). Chequer Lawn, St. Alban's, Herts.
- BRACEY, H. R. (1870). 115, Bristol Road, Edgbaston, Birmingham.
- BRADDON, C. H. (1857). Ryecroft House, Cheetham Hill, Manchester. M.D. St. And., J.P.  
R.A.
- BRAKE, J. (1850). 1, St. Leonards Road, Ealing. Surg.-Gen. I.M.S. (retired).  
1851. 1st Year Student, Scholarship.  
1852. 2nd Year, Student, Scholarship. Physiology, Prize.  
1853. 3rd Year Student, Scholarship. Clin. Med., Treasurer's Prize. Midwifery, Prize. Forensic Medicine, Prize.
- BRAKENRIDGE, F. J. (1889). 6, Cambrian Road, Richmond, Surrey.  
H.P., Clin. Assist. Electr. Dept.
- BRETON, L. M. (1888). Glendale, Portwood, Southampton.
- BREWIS, A. S. (1887). Hamilton, Auckland, New Zealand. M.D., B.S. Durh.
- BRINGLOE, J. (1848). 41, Milkwood Road, Herne Hill.
- BRISLEY, C. W. (1884). Eversley, Tower Road West, St. Leonard's-on-Sea.
- BRISTOW, G. H. (1884). F.R.C.S.I., M.D. Brux.  
Clin. Asst. Throat and Ear Depts.
- BRISTOWE, H. C. (1882). Wrington, Somerset. M.D. Lond.  
H.P., Ophth. H.S., A.H.S.
- BROCK, C. DE L. (1871). Alstone Lawn, Tooting Graveney.
- BROCK, J. (1871). 28, Wilbury Road, Hove, West Brighton.
- BROCKATT, A. A. (1881). Hazeldean, Malvern, Worc. M.D. Brux.  
R.A., H.P., Clin. Asst. Skin, Throat and Ear Depts.
- BROCKWAY, A. B. (1881). Southport, Queensland.
- BRODIE, T. Gregor. (1895). Lindfield, Uxbridge Road, Surbiton. M.D. Lond. Lecturer on Physiology, St. Thomas's Hospital. Examiner in Physiology for the Fellowship R.C.S.
- BROMET, E. (1889). St. John's Road, Redhill. M.A. Cantab
- BROOK, H. D. (1881). Fareham, Hants. D.P.H.
- BROOK, W. F. (1881). Longlands House, Swansea. F.R.C.S.  
H.S., A.H.S., Clin. Asst. Ear, Skin and Throat Depts.
- BROOKS, C. (1885). Chalfont St. Peter, Bucks.
- BROWN, F. G. (1859). 17, Finsbury Circus.  
1861. 2nd Year Student, 3rd Coll. Prize.  
1862. 3rd Year Student, 3rd Coll. Prize.
- BROWN, G. W. (1890). Craven Lodge, St. Margaret's Road, St. Leonards-on-Sea.
- BROWN, L. D. (1878). Henley Villa, Ealing.
- BROWN, The Hon. W. C. Hardwick, Penang. M.D., C.M. Aberd.
- BROWNE, E. A. (1863). 39, Rodney St., Liverpool. F.R.C.S. Edin. Lect. on Ophth. Univ. Coll. Liverpool.
- BRUCE, R. M. (1877). Med. Superint., West. Hosp., Seagrave Rd., Fulham.
- BRYAN, F. (1879). Senior Asst. Med. Off. Lond. Co. Asyl., Colney Hatch. M.B. Durh.
- BUCKLEY, T. W. (1877). Thrapston House, Thrapston, Northants.
- BULL, H. A. (1890). Albrighton, Wolverhampton.
- BULLEN, F. ST. J. (1880). 12, Pembroke Road, Clifton, Bristol.
- BULLOCK, H. M. (1879). Overtown House, Spring Grove, Isleworth.
- BULSTRODE, H. T. (1881). Local Govt. Bd., Whitehall. M.A., M.D. Camb., D.P.H.  
H.P., A.H.P., Clin. Asst. Throat, Skin and Ear Depts.
- BURD, G. V. (1873). Okehampton, Devon.
- BURDEN, H. (1886). Surg.-Lt. I.M.S. Bengal. F.R.C.S.  
w 1886-7. 1st Year Student, The William Tite Scholarship.  
s 1887. 1st Year Student, 2nd Coll. Prize.  
w 1887-8. 2nd Year Student, 2nd Coll. Prize.  
H.S., A.H.S.



- BURNS, A. H. (1877). 3, Josephine Avenue, Brixton Hill.
- BURTON, C. F. (1885). 1, Crescent Place, Whitby, Yorks.
- BURY, A. T. (1870). Sheen, Ashbourne, Derbyshire.
- BURY, G. W. F. (1853). Chew Magna, Somers. F.R.C.S.
- BUTLER, G. R. (1877). 38, Carlton Vale, Kilburn.
- BUTTERWORTH, S. (1878). Surg.-Maj., Army.
- BYERS, D. W. (1845). 1, Summerhill Road, Maindee, Newport, Mon.
- BYHAM, W. L. (1879). 15, High Street, Spalding, Linc.
- CADE, H. L. (1880). Albert Villa, 2, Queen's Road, Peckham.
- CAIGER, F. F. (1878). Med. Superint. S.W. Fever Hosp., Stockwell. M.D., B.S., M.R.C.P., Lond.; D.P.H. Cantab.  
w 1879-80. 1st Year Student, 3rd Coll. Prize.  
w 1880-1. 2nd Year Student, 3rd Coll. Prize.  
w 1882-3. 4th Year, the Mead Medal.  
H.S., A.H.S., H.P., A.H.P., R.A.
- CALVERT, J. T. (1882). Surg.-Capt. Bengal Army. M.B. Lond.; D.P.H. H.P., H.S., A.H.S.
- CALWELL, W. (1884). 1, College Square, North Belfast. M.A., M.D., M.Ch., R.U.I.
- CAMERON, C. (1858). Surg.-Lt.-Col., I.M.S. Bengal (retired).
- CAMERON, C. H. H. (1871). Kolassy House, Old Town, Eastbourne. D.P.H. R.A.
- CAMERON, W. J. Ellerslie, Balham Park Road. M.B. Lond.
- CAMPBELL, A. J. (1888). 74, Barcombe Avenue, Streatham Hill.
- CANDLER, G. (1891). Harleston, Norfolk. B.A. Cantab. Obst. H.P.
- CANN, R. T. (1880). Osborne Villa, Fowey, Cornwall.  
s 1882. 2nd Year Student, 1st Coll. Prize.  
s 1883. 3rd Year Student, 2nd Coll. Prize.
- CANNOCK, C. W. (1873). Counser Villa, Balham High Road.
- CAPORN, A. W. (1885). Woodstock, Cape Town.
- CARPENTER, A. B. (1876). Wykeham House, Bedford Park, Croydon, Surrey. M.A., M.B. Oxon. H.P., A.H.P., H.S.
- CARPENTER, E. (1861), Trevathan, Albemarle Road, Beckenham, Kent.
- CARPENTER, G. (1878). 12, Welbeck Street, Cavendish Square. M.D. Lond.; M.R.C.P.  
w 1880-1. 1st Year Student, 3rd Coll. Prize.  
s 1881. 1st Coll. Prize.  
w 1881-2. 2nd Year Student, 3rd Coll. Prize; Prosector's Prize.
- CARPENTER, J. W. (1853). Goudhurst, Kent. M.D. St. And.
- CARR-WHITE, P. (1889). Surg.-Capt. Madras Army. M.B., C.M. Edin.
- CARSTAIRS, H. J. (1884). Chiswell Lodge, Worcester Park, Surrey. Clin. Asst. Throat Dept.
- CARTER, A. W. (1889). M.B., C.M. Edin.
- CARTER, W. (1863). 78, Rodney Street, Liverpool. M.D., B.Sc., LL.B., F.R.C.P. Lond.; F.R.C.S.I.; J.P.
- CARTER, W. R. (1886). 23, Jury St., Warwick. M.A., M.B., B.C. Cantab. R.A., S.O.C.
- CARVER, J. R. (1890). The Hollins, Marple, Stockport. B.A., M.B., B.C. Cantab. Clin. Asst. Skin Dept.
- CASTLE, H. (1874). 99, The Mall, Newport, I.W. M.B. Lond.  
w 1874-5. 1st Year Student, 2nd Coll. Prize.  
s 1875. 3rd College Prize.  
w 1876-7. Physical Society's 3rd Year's Prize.  
H.S., A.H.S., R.A.
- CAUDLE, A. W. W. (1856). Henfield, Sussex.  
1858. Clinical Medicine, Prize.
- CAUDLE, C. E. (1858). Nazira, Assam, India.
- CAUDWELL, E. (1886). Harleston, Norfolk.
- CAVE-BROWN-CAVE, H. W. (1891). Lifford Hall, King's Norton, Worc.
- CHAFFERS, E. (1860). Broomfield, Keighley, Yorks. F.R.C.S.
- CHALDECOTT, C. W. (1848). Parkside, Dorking, Surrey.  
1849. Materia Medica, 2nd Prize;  
1st Year Student, Scholarship.  
1850. Surgery, Prize.  
1851. Physiology, Prize;  
Physical Society's Essay, Treasurer's Prize;  
General Proficiency, Treasurer's Silver Medal.

- CHALDECOTT, H. (1862). Rose Hill House, Dorking, Surrey.
- CHALDECOTT, J. H. (1880). Madgehill, Hanwell.
- CHAMBERS, J. M. (1891). Craigside, Llandudno.
- CHANCE, R. F. (1887). Rockstone House, Southampton. Obst. H.P.
- CHAPMAN, G. W. (1884). 98, New Walk, Leicester.
- CHARPENTIER, A. (1879). Rathmines House, Uxbridge, Middx. M.D. Durh.  
1882-3. 4th Year, The Mead Medal Exam., Special Mention.
- CHARSLEY, R. S. (1888). The Barn, Slough, Bucks. B.A. Oxon.
- CHEVALLIER, C. L. (1889). Miller Hospital, Greenwich.
- CHEVERS, H. L. G. (1879). Surg.-Capt. Army.
- CHILD, G. A. (1891). Pinewood House, Byfleet.
- CHISHOLM, M. (1885). Halifax, Nova Scotia, Canada.
- CHOPPING, A. (1890). Middle Mill, Colchester.
- CHRISTIE, F. (1886).
- CHURCHILL, F. (1867). 4, Cranley Gardens, Queen's Gate. M.D., C.M. Edin.; F.R.C.S. Surg. Registr.
- CLAPTON, E. (1850). 22, St. Thomas's Street, Southwark, and Towercroft, Lee. M.D., F.R.C.P., F.R.C.S.  
1851. 1st Year Student, 1st Scholarship; Descriptive Anatomy Prize; Chemistry, Prize.  
1852. 2nd Year Student, Scholarship; Physiology, Prize; Materia Medica, Prize; Botany, Prize.  
1853. 3rd Year Student, Scholarship; Clinical Medicine, Treasurer's Prize; Physical Society's Essay, Treasurer's Prize.  
1854. Ophthalmic Reports, Governor's Prize; Clinical Medicine, Mr. N. Smith's Prize.  
Physician and Lecturer on Materia Medica.
- CLAPTON, W. (1854). 27, Queen Street, Cheapside. F.R.C.S.  
1855. Materia Medica, Prize.  
1856. Clinical Medicine, Prize.
- CLARK, F. (1868). Crosby House, Gt. St. Helens, Bishopsgate.
- CLARK, H. J. (1887). Erceldoune, Swanage, Dorset.
- CLARKE, A. (1855). Stock, Ingatestone, Essex.
- CLARKE, A. W. V. (1890). 100, Stondon Park, Honor Oak Park.
- CLARKE, J. M. (1884). 28, Pembroke Road, Clifton, Bristol. M.A., M.D. Cantab., F.R.C.P. Physn. and Pathol. Bristol Gen. Hosp., Prof. of Path. Bristol Med. Sch. H.P.
- CLARKE, J. T. (1884).
- CLARKSON, F. C. (1880). Surg.-Capt. Bengal Army.
- CLARKSON, J. W. (1870). Surg.-Lt.-Col. Bombay Army. H.P., H.S.
- CLEAVER, W. F. (1879). Clarence Street, Port of Spain, Trinidad.
- CLEGHORN, G. (1868). Blenheim, Marlboro', New Zealand. M.D. Durh. H.S.
- CLEMENTS, W. H. (1879).
- CLEVE, R. P. (1862). 4, Lincoln's Inn Fields. H.S., R.A.
- CLIFTON, G. (1866). 48, London Road, and 7, Bowling Green Street, Leicester. J.P.
- CLOWES, J. P. (1884). Asst. Med. Off. Co. Asyl., Prestwich, Manchester.
- CLUTTON, H. H. (1872). 2, Portland Pl. M.A., M.B., M.C. Cantab.; F.R.C.S. Surgeon and Lect. on Surgery, St. Thomas's Hospital; Examiner in Surgery, Univ. Camb. Res. Asst. Surg., Surg. Reg., H.S.
- COAD, J. E. (1886). Surg. R.N. M.B. Durh.
- COATES, W. H. (1868). Hucknall Torkard, Notts.
- COBBETT, L. (1886). 2, Round Church Street, Cambridge. M.A., M.B. Cantab.; F.R.C.S.; Demonstr. of Pathol. Univ. Camb. H.S., A.H.S., H.P.
- COCKELL, F. E., Jun. (1872). Holly Lodge, Forest Road, Dalston. Merchant Taylors' Scholar.
- COGILL, H. (1886).
- COHEN, A. A. (1877). 61, Darlinghurst Road, Sydney, N.S. Wales. M.D. Aberd.

- COLBY, G. (1857). Brawby Park, Pickering, Yorks.
- COLBY, W. T. (1848). The Mount, Malton, Yorks. M.D. St. And.; J.P.
- COLEMAN, P. (1884). Dudbrook House, Clacton-on-Sea. M.B., B.S. Durh.
- COLLCUTT, A.M. (1886). 36, Bloomsbury Square. M.A., M.B., B.C. Cantab.  
H.P. Clin. Asst. Ear Dept.
- COLLIER, H. (1882). 21, South Quay, Gt. Yarmouth. M.D. Brux.
- COLLIER, M. P. M. (1874). 133, Harley St., Cavendish Sq. M.S., M.B. Lond.; F.R.C.S.  
H.S., A.H.S., A.H.P.
- COLLIER, S. R. (1889). Clarence Villa, Hartfield Rd., Wimbledon. M.D., M.Ch. R.U.I.
- COLLIER, W. A. (1892). 36, Gt. Smith St., Westminster.
- COLLINGWOOD, P. H. (1889).
- COLLIS, E. L. (1893). B.A., M.B., B.Ch., Oxon.  
w 1895-6. Bristowe Medal.  
Obst. H.P.
- COLMAN, G. M. H. (1877). Surg.-Maj. Army (retired). M.A., M.B. Cantab.
- COLSTON, J. (1855). 189, Mill Road, Cambridge.
- CONFORD, G. J. (1892). The Coppice, Nottingham. B.A., M.B., B.Ch. Oxon.  
H.P., H.S., A.H.S., Clin. Asst. Elect. Dept.
- CONNER, J. R. T. (1888). 413, Kingsland Road. B.A.R.U.I., M.D., M.Ch.
- COOK, P. I. (1873). Byfield, High St., Bromley, Kent. M.D. Brux.
- COOK, R. (1864). Leiston, Suffolk. M.D. Glasg.
- COOK, S. B. (1882). Askam-in-Furness, Lancs. B.A., Cape of Good Hope; M.D. Lond.  
s 1883. 1st Year Student, 2nd Coll. Prize.  
A.H.S., A.H.P., Clin. Asst. Skin Dept.
- COOK, T. D. (1880). Glendon, Torquay. M.B., C.M. Glasg.
- COOKE, C. W. (1883). 107, Walm Lane, Willesden Green. M.D. Lond.  
Merchant Taylors' Scholar.  
w 1883-4. 1st Year Student, 1st Entrance Science Scholarship.  
H.P., A.H.S., Clin. Asst. Throat and Ear Depts.
- COOKE, J. (1853). Tettenhall. Wolverhampton. M.B. Lond.; F.R.C.S.  
1855. Comparative Anatomy, Prize.
- COOKE, J. B. (1874). The Elms, Parkhurst, I.W.
- COOKSON, H. (1881). Surg.-Maj., I.M.S. Bengal. (Retired). F.R.C.S.
- COOMBE, A. T. (1871). 81, Clarendon Road, Notting Hill.
- COOMBE, C. F. (1882). 459, Crookes Moor Road, Sheffield.
- COOPER, G.F. (1878). Lagunas, Iquique. South America. M.B., B.S. Lond.  
H.S., A.H.S., A.H.P., R.A.
- COOPER, H. J. (1886). Belmont, Lyme Regis, Dorset. M.A., M.B., B.C. Cantab.  
H.P., Clin. Asst. Ear and Skin Depts.
- COOPER, H. S. (1886). Brightlingsea, Essex.  
s 1887. 2nd Year Student, 2nd Coll. Prize.
- COPELAND, W. H. L. (1885). 59, Warwick Road, Earl's Court. M.A., M.D., B.C. Cantab.  
H.P.
- COPEMAN, A. H. (1890). Sunnyside, Littleport, Cambs. B.A. Cantab.
- COPEMAN, S. M. (1883). Local Govt. Board, Whitehall. M.A., M.D. Cantab.; M.R.C.P., D.P.H. Lecturer on Pub. Health, Westminster Hosp. Demonstrator of Physiology and Morbid Histology.
- CORBETT, T. (1857). Severn House, Droitwich, Worc.
- CORBIN, E. K. (1870). 9, Saumarez Street, St. Peter Port, Guernsey.
- CORBIN, M. A. B. (1832). 9, Saumarez Street, St. Peter Port, Guernsey. F.R.C.S.  
1834. Cheselden Medal.
- CORNEY, B. G. (1868). Suva, Fiji.
- CORNWALL, J. W. (1892). Surg.-Lt. I.M.S. M.A., M.B., B.C. Cantab.  
Clin. Asst. Throat Dept.
- CORY, I. R. (1878). Shere, Guildford, Surrey.
- CORY, R. (1867). 73, Lambeth Palace Rd. M.A., M.D. Cantab., F.R.C.P., Joint Lect. on For. Med. Physn. Vacc. Dept.  
1870. Physical Society's 3rd Year's Prize.  
H.S., Asst. Obst. Phys.
- COULTER, W. (1881). 2/2, Harington Street, Calcutta, India. M.D., M.Ch. R.U.I.

- COUSINS, J. W.** (1853). Riversdale, Kent Rd., Southsea. M.D. Lond.; F.R.C.S., J.P.  
 1855. Surgery, Prize;  
 Midwifery, Prize.  
 1856. Clinical Medicine, Prize;  
 Surgery and Surgical Anatomy, Cheselden Medal.
- COWELL, A. R.** (1887). 28, Downshire Hill, Hampstead. M.A., M.B., B.C. Cantab.
- COWEN, E. I.** (1875). Cleveland Villa, Thornaby-on-Tees.
- COWEN, E. J.** (1892). Los Angeles, California, M.B., B.S. Durh.
- COWEN, P.** (1861). 47, Ingleby Road, Upper Holloway. M.D. Durh.; D.P.H. Camb.  
 1862. 1st Year Student, 2nd Coll. Prize.  
 1863. 2nd Year Student, 2nd Coll. Prize.  
 1864. 3rd Year Student, 2nd Coll. Prize.
- COWEN, T. P.** (1884). 47, Ingleby Rd., Upper Holloway. M.D., B.S. Lond.  
 w 1884-5. 1st Year Student, Half 1st and 2nd Coll. Prizes.  
 s 1885. 1st Year Student, 2nd Coll. Prize.  
 w 1885-6. 2nd Year Student, 1st Coll. Prize.  
 s 1886. 2nd Year Student, 1st Coll. Prize.  
 w 1886-7. 3rd Year Student, 2nd Coll. Prize.  
 H.P., H.S., A.H.S., Clin. Asst. Ear Dept.
- COWEN, W. A. D.** (1873). Surg.-Maj. Army.
- COWIE, A. M.** (1890). Bank Buildings, Hong Kong, China. M.B., C.M. Aberd.
- COWIE R. A.** (1890).
- COX, A. E.** (1887). 36, Hoghton Street, Southport. M.B., C.M. Edin.
- COX, A. E.** (1881). 58, High St., and Upton Rd., Watford, Herts.
- COX, J. L. C.** (1879). St. Ann's Bay, Jamaica.
- COXWELL, C. F.** (1879). Brighton, Melbourne, Australia. M.D. Cantab., M.R.C.P., D.P.H.  
 1880. 4th Year Student, the Mead Medal. H.P.
- CRANSTOUN, C. B.** (1881). 15, Broad Street, Ludlow, Salop. M.B. Durh.
- CRANSTOUN, G.** (1881). 3, Brand Lane, Ludlow, Salop. M.B. Durh.
- CREIGHTON, C.** 34, Gt. Ormond Street. M.A., M.D., C.M. Aberd.; M.A. Cantab.  
 Surg. Registr., 1873.
- CREIGHTON, E.** (1878). Tankerville House, Greyhound Lane, Streatham Common.
- CRICK, A.** (1885). Vale Lodge, Abbey Road, St. John's Wood.
- CRICK, S. A.** (1874). Junior Army and Navy Club, St. James's. M.B., M.S. Durh.  
 w 1875-6. Prosector's Prize.  
 w 1876-7. 3rd Year Student, 3rd Coll. Prize. A.H.P., A.H.S.
- CRICK, W. T.** (1877). Rupert's Rest, Great Glenn, Leic.
- CRISP, E. H.** (1883). The Lawns, Balham Hill. B.A. Cantab.  
 Clin. Asst. Skin, Throat, and Ear Depts.
- CRISP, T.** (1874). M.B. Lond.
- CROFT, J.** (1850). 6, Mansfield Street, Cavendish Sq. F.R.C.S., Consulting Surgeon St. Thomas's Hospital.  
 Special Lecturer on Clinical Surgery, Surgeon, Lecturer on Practical Surgery, and Assistant Demonstrator of Anatomy.
- CROKER, E. U.** (1891).
- CROSBY, H. T.** (1880). 19, Gordon Sq. M.A., M.B., B.C. Cantab.
- CROSBY, T. B.** (1850). 19, Gordon Sq. M.D. St. And.; F.R.C.S.  
 1851. Physiology, Prize;  
 Descriptive Anatomy, Prize;  
 Medicine, Prize;  
 Surgery, Prize.  
 1852. Physiology, Prize;  
 Forensic Medicine, Prize;  
 Practical Chemistry, Prize;  
 Surgery and Surgical Anatomy, Bronze Cheselden Medal;  
 Comparative Anatomy, Prize.  
 H.S. and Demonstr. of Anat.
- CROSS, E. J.** (1883). St. Neots, Hunts. D.P.H. Cantab.
- CROSS, G.** (1887). Burgh, Lincolnsh.
- CROSS, J.** (1888). 1, Finchley Road, Kennington Park.
- CROSSMAN, J.** (1870). 331, Wandsworth Road. M.D. Durh.  
 1871. Physical Society's 1st Year's Prize.  
 1872. Physical Society's 2nd Year's Prize.  
 1873. Physical Society's 3rd Year's Prize. H.S.
- CROUCH, H. C.** (1890). Royal Orthopaedic Hospital.  
 w 1890-1. 1st Year Student, 2nd Entrance Science Scholarship.  
 H.S., A.H.S.
- CROUCHER, H.** The Limes, 320, Dartford Road, Dartford, Kent (retired).
- CROUDACE, J. H.** (1883). 23, Marston Road, Stafford.
- CROWDY, F. D.** (1881). Belvedere House, Torquay. M.A., M.D. Oxon.  
 w 1884-5. 4th Year Student, the Mead Medal.  
 H.S., A.H.S., H.P.



- CROXFORD, W. C. (1883). Havelock House, Park Road, Peterborough.
- CUFF, A. W. (1891). Res. Med. Off. Gen. Infirm. Sheffield. B.A., M.B., B.C. Cantab., F.R.C.S.  
H.S., A.H.S., Clin. Asst. Throat Dept.
- CULLINGWORTH, C. J. 14, Manchester Square. M.D., Hon. D.C.L. Durh.; F.R.C.P.; Obst. Phys. and Lect. on Midw. and Dis. of Women, St. Thomas's Hospital.
- DADACHANJI, E. R. (1880). Baroda, India.
- DALGADO, D. G. (1879). Savantvadi, India. M.D. Brux.
- DANIEL, E. G. C. (1892). 6, The Terrace, Epsom. B.A., M.B., B.C. Cantab. H.P.
- DANIEL, R. N. (1886). 6, Leyland Road, Lee.
- DANVERS, H. (1882). Villa Semeria, Bordighera, Italy.
- DARBYSHIRE, D. E. (1892). Seamen's Hospital, Greenwich. M.B., B.Ch. Vict.
- DARKER, G. F. (1887). 21, Palace Square, Upper Norwood.
- DARTER, G. B. S. (1885). Victoria West, Cape Colony. M.B., B.S. Durh.
- DAVIDSON, A. D. (1872). 9, Picton Place, St. Helen's Road, Swansea. M.A., M.D. Cantab.  
Ophth. Asst.
- DAVIDSON, G. (1888).
- DAVIES, A. O. (1886). Penrallt, Machynlleth, Montg.
- DAVIES, D. S. (1874). Public Health Offices, 40, Prince Street, Bristol, and 60, Oakfield Road, Clifton. (Not in private practice.) M.B., M.D. (State Med.) Lond.; D.P.H. Cantab.  
1875-6. Physical Society's 1st Year's Prize. H.S., A.H.S., A.H.P.
- DAVIES, S. H. R. (1888). Ashleigh, Teignmouth, S. Devon.
- DAVIS, E. H. (1870). West Hartlepool. J.P.  
R.A.
- DAVIS, G. W. (1880). Sunnydene, Main Road, Sidcup, Kent. M.D., B.S. Durh.
- DAVIS, H. E. (1882). 619, Green Lanes, Harringay.
- DAVIS, H. J. (1889). New University Club, M.A., M.B., B.C. Cantab. H.S., A.H.S. Clin. Asst. Ear Dept.
- DAVIS, R. (1889). Darrickwood, Orpington, Kent.
- DAWNAY, A. H. P. (1892). 17, Scarsdale Terrace, Cheniston Gardens, Kensington.  
Ophth. H.S. Clin. Asst. Skin Dept.
- DAY, E. J. (1871). Dorchester.
- DAY, W. H. (1843). Surrey Street, Norwich.
- DEANE, E. (1873). Rodber House, Wincanton, Somers. (retired).
- DE CAUX, H. L. (1881). The Eagles, Gregory Boulevard, Nottingham.
- DECK, J. F. (1859). Ashfield, Sydney, N.S. Wales. M.D. St. And.  
1860. 1st Year Student, 1st Coll. Prize.  
1861. 2nd Year Student, 1st Coll. Prize Physical Society's Prize.  
1862. 3rd Year Student, 1st Coll. Prize Physical Society's Prize; Cheselden Medal; Treasurer's Gold Medal.
- DE GRUCHY, C. W. (1881). 30, High Street, Caerleon, Monmouthsh.
- DE JERSEY, W. B. (1886). Waterden Road, Guildford. B.A., M.B., B.C. Cantab.  
A.H.P., Clin. Asst. Ear Dept.
- DE LOM, H. A. (1880). Surg.-Capt. Army.
- DENNE, T. V. de. (1864). Cradley Heath, Staffordsh.
- DE VILLIERS, J. H. (1890). 104, Cromwell Road.
- DEWES, F. J. (1880). Surg.-Capt. Madras Army.
- DE WET, P. C. (1882). Cradock, Cape Colony, S. Africa.
- DEWHURST, J. H. (1887). Chipping Campden, Glouc. M.A., M.B., B.C. Cantab.  
H.S., A.H.S.
- DE WOOLFSON, L. E. G. (1877). 26, St. John's Hill, Shrewsbury.
- DICKENS, C. H. (1888). 269, Stanhope St. M.B., B.S. Durham.
- DICKERSON, S. H. (1851). Brig.-Surg. Army (retired).



- DICKINSON, W. G. (1871). Elm Bank, West Hill, Putney Heath. D.P.H.
- DICKSON, H. A. D. (1888). Surg.-Lt. I.M.S., Bengal. F.R.C.S. H.S., A.H.S.
- DICKSON, T. H. (1885). Custom House, Lr. Thames Street, and 32, Belvedere Road, Upper Norwood. M.A., M.B., B.C. Cantab. A.H.P., Clin. Asst. Throat Dept.
- DILLON, R. W. (1888). 1, Galveston Road, East Putney.
- DIXON, H. L. (1888). Asst. Med. Off. St. Andrew's Hosp., Northampton. M.A., M.B., B.C., D.P.H. Cantab.
- DIXON, W. E. (1890). 28, Benson Rd., Forest Hill. M.B., B.S., B.Sc. Lond. Salters' Company Research Fellow. w 1890-91. 1st Year Student, 1st Entrance Science Scholarship. s 1891. 1st Year Student, 2nd Coll. Prize. H.P., Clin. Asst. Electr. Dept.
- DOBSON, A. (1889). Elmhurst, Ilkeston, Derby.
- DOBSON, N. C. (1864). 27, Victoria Square, Clifton, Bristol. F.R.C.S., Emer. Prof. Surg. Bristol Univ. Coll., Cons. Surg. Bristol Gen. Hosp. 1865. 1st Year Student, 1st Coll. Prize. 1866. 2nd Year Student, 1st Coll. Prize. 1867. 3rd Year Student, 2nd Coll. Prize; A Prize and Hon. Cert. for Proficiency in Surgery and Surgical Anatomy at the Cheselden Medal Examination; Treasurer's Gold Medal. H.S.
- DODD, G. H. (1878). Portswood Road, Southampton. B.A. Cantab.
- DONKIN, H. B. (1868). 108, Harley Street, Cavendish Sq. M.A., M.D. Oxon.; F.R.C.P. H.P.
- DORMAN, M.R.P. (1888). 9, Norfolk Crescent, Hyde Park. M.A., M.B., B.C., D.P.H. Cantab. H.P., Clin. Asst. Throat Dept.
- DOUBLEDAY, J. (1848). Milford, Godalming, Surrey (retired).
- DOUDNEY, G. H. (1876). St. Lawrence, Wainfleet, Linc. M.B. Durh.
- DOUGLAS, A. L. (1878). 163, Westbourne Terr., Hyde Park.
- DRAKE, C. H. (1857). Brixton Hill. 1858. 2nd Year Student, Treasurer's 1st Prize; Clinical Medicine, 2nd Prize. 1859. Surgery and Surgical Anatomy, Cheselden Medal; General Proficiency, Treasurer's Medal. H.S.
- DRAKE, T. (1857). Red House, Winchester. 1858. 2nd Year Student, Treasurer's 1st Prize. 1859. 2nd Year Student, President's Prize. 1860. 3rd Year, 1st Coll. Prize; Surgery and Surgical Anatomy, Cheselden Medal; General Proficiency, Treasurer's Medal.
- DRAKE, W. E. (1888). Red House, Winchester. M.A., M.B., B.C. Cantab.
- DRESSER, A. K. (1872).
- DRINKWATER, T. W. (1871). Chemical Laboratory, 5, Teviot Place, Edinburgh. Lect. on Chem. Sch. of Med. Edin.; Exam. in Chem. and Pub. Health R.C.S. Edin.
- DRUITT, A. B. (1880).
- DUFF, J. (1885). 5, Abbey St., Abbey Sq., Chester. M.D., C.M. Glasg.; M.R.C.P. Clin. Asst. Throat Dept.
- DUKES, C. (1864). Sunnyside, Rugby, Warwickshire. M.D., B.S. Lond., M.R.C.P., J.P.; Physician to Rugby School, and Senior Physician to Rugby Hospital. H.S.
- DUKES, T. A. (1885). 16, Wellesley Road, Croydon, Surrey. M.B., B.Sc. Lond. H.P.
- DUMERGUE, H. W. (1884). 88, Victoria Street, Westminster. M.A., M.D., B.C. Cantab.
- DUNCAN, H. (1882). 11, Bolton Street, Piccadilly. B.A. Cantab., M.B. Lond. w 1882-3. 1st Year Student, 1st Entrance Science Scholarship, 1st Coll. Prize. w 1883-4. 2nd Year Student, Prosector's Prize. A.H.S. Clin. Asst. Skin Dept.

- DUNCAN, W. (1876). 6, Harley St., Cavendish Sq. M.R.C.P. Lond., M.D. Brux., F.R.C.S.; Obstetric Physician to, and Lecturer on Obstetric Medicine and Practical Midwifery at, Middlesex Hospital. Sen. Phys. Chelsea Hospital for Women. Examiner in Midwifery, Examining Board in England.  
w 1876-7. 1st Year Student, The William Tite Scholarship.  
s 1877. 1st Coll. Prize.  
w 1877-8 2nd Year Student, The Musgrove Scholarship;  
2nd Year Physical Society's Prize.  
s 1878. 1st Coll. Prize.  
w 1878-9. 2nd Tenure Musgrove Scholarship; 1st Coll. Prize;  
3rd Year Physical Society's Prize;  
Grainger Testimonial Prize.  
1880. 4th Year Student, The Cheselden Medal;  
The Treasurer's Medal.  
w 1881-2. The Solly Medal and Prize.  
H.S., R.A.
- DUNN, E. D. (1883). Brightwater, Nelson, New Zealand.
- DUNN, J. E. (1878). 24, Stephenson Terrace, Preston, Lanc.
- DUNSTAN, W. R., Queen Anne's Mansions. M.A., Oxon, F.R.S. Lecturer on Chemistry.
- DURANT, R. J. A. (1876). Surg.-Capt. Army.
- DURRANT, C. E. (1891). Taunton and Somerset Hospital, Taunton.  
Clin. Asst. Ear Dept.
- DURRANT, T. A. (1883). Northampton Road, Market Harborough, Leic.  
Clin. Asst. Skin and Ear Depts.
- DURSTON, J. C. (1888). 67D, Upper Tulse Hill. Surg. R.N.
- DUTTON, A. S. (1884).
- DYBALL, B. (1890). Gatton Lodge, Reigate.  
w 1891-2. 1st Year Student, 1st College Prize.  
w 1894-5. 4th Year Student, The Cheselden Medal.  
1896. Beaney Scholarship.  
H.S., A.H.S., Clin. Asst. Ear Dept.
- DYKE, T. J. (1836). Merthyr-Tydvil. F.R.C.S.
- EARLE, H. E. L. (1878). Surg. R.N. (retired).
- EASTON, T. (1883). Hanover House, Stranraer, Wigtownshire. M.A., M.D., C.M. Edin.
- ECCLES, C. H. (1883). Priestgate House, Nafferton, Yorks.  
w 1884-5. 2nd Year Student, 1st Coll. Prize.  
s 1885. 2nd Year Student, 1st Coll. Prize.  
w 1885-6. 3rd Year Student, 1st Coll. Prize.  
s 1886. 3rd Year Student, 1st Coll. Prize.  
H.P.
- ECCLES, R. B. (1885). Great Driffield, Yorks.
- EDDOWES, J. H. (1842). Burleigh Fields, Loughborough, Leic. M.D. Glasg.  
1843. Comparative Anatomy, Prize.  
1844. Clinical Medical Reports, Silver Medal.  
1845. Clinical Medicine, Prize.
- EDDOWES, W. D. (1844). Stamford, Linc. Cons. Surg. Stamford Infirm.  
1845. Descriptive and Surgical Anatomy, Prize.
- EDDOWES, W. D., Jun. (1877). 29, Birch Terrace, Hanley, Staffs.
- EDGE, F. Oakfield, Compton Road, Wolverhampton. M.D., B.S., B.Sc. Lond.; F.R.C.S., M.R.C.P.
- EDISS, G. N. (1836).
- EDMONDS, C. G. (1862). Manor House, Manor Park, Streatham.
- EDMUNDS, W. (1871). 75, Lambeth Palace Road. M.A., M.B., M.C. Cantab.; F.R.C.S. Res. Med. Off. St. Thos. Home.  
H.P., R.A., H.S.
- EDWARDS, F. W. (1887). Camp Field, Overhill Road, Forest Hill.
- EDWARDS, V. (1842). The Villa, Shotisham, Woodbridge, Suffolk (retired).
- EDYE, J. S. (1880). Surg.-Capt. Army.
- ELLIOTT, J. W. (1854). 5, Manor Road, Forest Hill (retired).  
Late Surg. Dentist.
- ELLIS, H. H. (1880). Carbis Water, Lelant, Cornwall.
- ELLIS, J. (1854). Cobourg St., Fratton, Portsmouth, and Anaheim, Los Angeles Co., California. M.D. Brux.; M.R.C.P.I.  
H.S.
- ELLIS, R. K. (1884). Westgate, Peterborough. M.A., M.B., B.Ch. Oxon. Jun. and Sen. Obst. H.P.
- ELLIS, W. C. (1884). Tollerton, Easingwold, Yorks.
- ELWIN, C. J. (1853). 6, City Road. 1855. Practical Midwifery, Prize.

- EMBLETON, D. (1833). 19, Claremont Place, Newcastle-on-Tyne. (retired.) M.D. Durh., M.D. Pisa, F.R.C.P. Cons. Phys. Newc. Ry. Infirm.
- EMIN, M. (1891). M.B., C.M. Edin.
- EMSON, A. (1869). Dorchester.
- ENGLAND, G. F. A. (1883). 12, Southgate Street, Winchester. B.A., M.D., B.C. Cantab.
- ENGLAND, H. (1888). B.A. Cantab.
- ETHERIDGE, C. (1860). Seasalter, Whitstable, Kent.
- EVANS, J. T. (1825). M.D. St. And.
- EVE, R. W. (1851). 101, Lewisham High Road. M.B. Aberd.
- EVELYN, W. A. (1882). 24, Mickle-gate, York. M.A., M.D. Cantab.
- FAIRBAIRN, J. S. (1893). B.A., M.B., B.Ch. Oxon. H.P.
- FAIRBANK, J. (1864). 18, George St., Hanover Square. 1866. 2nd Year Student, Prosector's Prize.
- FARRANT, S. (1857). North Street House, Taunton.
- FAULDS, H. (1886). 141, Duke St., Fenton, Stoke-on-Trent.
- FAWSSETT, F. (1882). 83, High Street, Lewes, Sussex. M.B., B.S. Lond. w 1883-4. 1st Year Student, 2nd Entrance Science Scholarship. The William Tite Scholarship. s 1884. 1st Year Student, 1st Coll. Prize. w 1884-5. 2nd Year Student, The Musgrove Scholarship. w 1885-6. 3rd Year Student, 2nd tenure of Musgrove Scholarship, with 3rd Coll. Prize. w 1886-7. 4th Year Student, The Cheselden Medal, Treasurer's Gold Medal. R.A., H.S., A.H.S.
- FAWSSETT, R. (1887). Surg.-Lt. Army.
- FELL, W. (1877). Wellington, New Zealand. M.D. Oxon. H.P., A.H.P., A.H.S., R.A.
- FENTON, H. A. H. (1875). 1, Cumberland St., Pimlico. M.D. Brux. w 1875-6. 1st Entrance Science Scholarship. s 1876. 1st Year Student, 1st Coll. Prize.
- FENWICK, P. C. (1889). 29, Harley Street. M.B. Lond. Sen. and Jun. Obst. H.P.
- FERNANDES, A. S. Chickmaglore, India. M.R.C.P. Edin.
- FERNIE, W. T. (1850). The Nook, Great Malvern. M.D. Durham. R.A.
- FIELDING, J. (1868). Bethel Street, Norwich. M.D. Vict. Univ. Canada. R.A.
- FINCHAM, W. S. (1884). 53, Kew Bridge Road, Brentford, Middlx.
- FINUCANE, M. I. (1881). Fiji.
- FISH, C. E. (1889). Paddington Infirmary, Harrow Road. B.A., M.B. B.C. Cantab.
- FISHER, J. (1888). Surg.-Lt. I.M.S Bengal. B.A., M.B., B.C. Cantab Ophth. H.S.
- FISHER, J. H. (1886). 34, Queen Anne Street. M.B., B.S. Lond., F.R.C.S Junior Demonstr. of Anat. Asst. Ophthalmic Surgeon. w 1887-8. 1st Year Student, The William Tite Scholarship. s 1888. 1st Year Student, 1st Coll. Prize w 1888-9. 2nd Year Student, The Musgrove Scholarship. w 1889-90. 3rd Year Student, 2nd tenure of Musgrove Scholarship, with 1st Coll. Prize. s 1890. 3rd Year Student, 1st Coll. Prize. w 1890-1. 4th Year Student, Treasurer's Gold Medal. Sen. and Jun. Obst. H.P., H.S., A.H.S., Clin. Asst. Ear Dept., Ophth. H.S.
- FISHER, T. (1872). Mulberry House, Gt. Eccleston, Garstang, Lanc. s 1873. 2nd Year Student, 2nd Coll. Prize. w 1874. 2nd Year Student, 3rd Coll. Prize. w 1875. 3rd Year Student, Surgery and Surgical Anatomy, Prize.
- FISHER, T. E. H. (1885). 272, Wightman Road, Hornsey.
- FITZGERALD, G. C. (1882). Med. Superint. Kent Co. Asyl., Chartham Down, Canterbury. M.D., B.C. Cantab.
- FITZGERALD, W. A. (1879). Monte Carlo, Monaco. A.B., M.D. Dublin.; F.R.C.S.I.
- FITZ-HENRY, G. W. (1880). Amberley, North Canterbury, New Zealand.
- FLEGG, F. A. M. (1886). George Lane, Woodford, Essex.
- FLETCHER, G. (1869). 60, Southwood Lane, Highgate. B.A., M.D. Cantab.
- FLETCHER, T. B. E. (1836). 8, Clarendon Cresc., Leamington (retired). B.L. Paris; M.D., F.R.C.P., J.P., Cons. Phys. Birm. Gen. Hosp.
- FLETCHER, W. B. (1859). Fleet Surg. R.N. (retired).
- FLOYER, F. A. (1880). Mortimer, Berks. B.A., M.B. Cantab. Demonstr. of Pract. Surg.
- FOLEY, C. N. (1878). 164, Devonshire Road, Forest Hill.
- FONMARTIN, H. de (1875). Vue, Loire Inférieure, France. M.D. Paris.

- FOOKS, W. P.** (1888). Med. Superint. Brentford Union Infirmary, Isleworth. M.A., M.B., B.C. Cantab. H.P.
- FOOTNER, E.** (1855). Brig. Surg. Army (retired). M.D., C.M. Aberd.
- FORD, A. V.** (1872). South View Lodge, Kent Rd., Southsea.
- FORD, T. A. V.** (1880). Haileybury College.
- FORDE, T. A. M.** (1885). 13, South Parade, Southsea.  
H.S., A.H.S., Clin. Asst. Skin and Throat Depts.
- FORRESTER, W.** (1894). 43, Kacheri Road, Lahore, Punjaub, India.
- FORSTER, H. B.** (1878). Ferrars Place, Albert Park, Melbourne, Victoria, Australia.
- FORT, T.** (1873). Falcon House, King Street, Oldham.
- FORWARD, F. E.** (1884). Antigua, W. Indies. F.R.C.S.  
H.P., Ophth. H.S.
- FOURACRE, R. P.** (1859). 58, Tollington Park, Holloway.
- FOWLER, F.** (1883). Minchinhampton, Stroud, Glouc.
- FOWLER, REV. J. T.** (1853). Bp Hatfield's Hall, Durham, and Winterton, Doncaster (retired). M.A., D.C.L. Durh.  
H.S.
- FOXWELL, A.** (1877). 22, Newhall Street, Birmingham, and Northfield Grange, near Birmingham. B.A. Lond.; M.A., M.D. Cantab.; F.R.C.P. Physician Queen's Hosp., Birmingham. Examiner in Medicine Univ. Camb.  
H.P.
- FRANCIS, G. P.** (1874). The Bulwark, Brecon.
- FRANKLIN, G. C.** (1866). 39, London Road, Leicester. F.R.C.S.  
H.S., R.A.
- FRASER, D. H.** (1889). 46, Broughton Road, Pendleton, Manchester.
- FRASER, D.** (1877). Peterborough, Ontario, Canada.
- FRASER, H.** (1884). Bank House, Slough.
- FRAZER, W. D.** (1890). St. Thomas's Hospital.  
H.S., A.H.S., Clin. Asst. Ear and Electr. Depts.
- FREDERICK, H. J.** (1887). Kornthal, Sidcup, Kent.  
Clin. Asst. Throat and Ear Depts.
- FREEMAN, A. J.** (1861). 14, Manchester Square, and San Remo, Italy. M.D. Aberd.  
Asst. Res. Med. Off.
- FREEMAN, D.** (1857). 218, Marylebone Road.  
1859. Clinical Medicine, Prize.
- FREEMAN, E. C.** (1879). Surg.-Capt. Army.
- FREEMAN, W. H.** (1840). 21, St. George's Square, Pimlico (retired).
- FROHWEIN, O. F.** (1880). 181, High Street, Burton-on-Trent.
- FULLER, A. L.** (1888). 1, Montpelier, Lansdown Road, Bath.
- FULLERTON, F. W.** (1887). 79, Prospect Street, Hull. M.D., B.S. Durh.
- FURNIVAL, F. H.** (1878). Auburn, S. Australia.  
w 1878-9. 1st Year Student;  
The Wm. Tite Scholarship.
- GABBETT, P. C.** (1887). Surg.-Capt. I.M.S., Madras.
- GARDENER, W. F.** (1884). Darley House, Venner Road, Sydenham.
- GARNER, J.** (1888).
- GARTON, W.** (1869). Inglewood, Aughton, Ormskirk. M.D., C.M. Edin.; F.R.C.S.  
1870. 2nd Year Student, 2nd Coll. Prize;  
Physical Society's 2nd Year's Prize.  
1871. Physical Society's 3rd Year's Prize.  
H.P., H.S., R.A.
- GAUSSEN, D. P.** (1884). The Hill, Dunmurry, co. Antrim. M.D., R.U.I.
- GEDGE, A. S.** (1886). Asst. Med. Off. Co. Asyl., Maidstone, Kent.
- GENGÉ, G. G.** (1890). 1, Poplar Walk, Croydon. M.B., B.S. Lond., D.P.H. Camb.  
w 1890-1. 1st Year Student, 1st. Coll. Prize.  
s 1891. 1st Year Student, 1st Coll. Prize.  
w 1891-2. 2nd Year Student, The Peacock Scholarship.  
w 1892-3. 3rd Year Student, 2nd Tenure of Peacock Scholarship, with 1st Coll. Prize.  
w 1893-4. 4th Year Student. The Mead Medal; The Treasurer's Gold Medal.  
H.P., Obst. H.P., Clin. Assist. Ear and Skin Depts.
- GEORGE, A. W.** (1888). 1, Burton Road, Brondesbury. M.B., C.M. Edin.



- GEORGE, C. F. (1854). Kirton-in-Lindsey, Linc.  
1856. 2nd Year Student, Dr. Root's Prize.  
1857. Surgery and Surgical Anatomy. Cheselden Medal.  
H.S.
- GEORGE, H. (1882). Innisfail, Alberta, Canada. M.D. St. And.
- GERVIS, A. F. (1884). 1, Queen's Crescent, Haverstock Hill.
- GERVIS, F. H. (1860). 1, Fellows Road, Haverstock Hill.  
1861. 1st Matriculation Scholarship—Coll. Prize, 2nd College Prize.  
1862. 2nd Year Student, 1st Coll. Prize.  
H.S., R.A.
- GERVIS, F. H. (1891). 1, Fellows Road.  
w 1891-2. 1st Year Student, 2nd Entrance Science Scholarship.  
H.S., A.H.S.
- GERVIS, H. (1855). 40, Harley St., and The Towers, Hillingdon, Uxbridge. M.D. Lond., F.R.C.P. Consulting Obstetric Physician to St. Thomas's Hospital, and to the Royal Maternity Charity.  
1856. 1st Year Student, Trea. 1st Prize; Matriculation Examination, Physics, &c., Prize.  
1857. 2nd Year Student, President's Prize; Physical Society's Essay, Prize.  
1858. Clinical Assistant (Medicine), 2nd Prize; Physical Society's Essay, Prize; General Proficiency, Trea. Medal.  
Obstetric Physician. Lecturer on Midwifery and Diseases of Women and Children.
- GERVIS, H. (1884). Windhill Place, Bishops Stortford, Herts. M.A., M.B., B.C. Cantab.  
H.S., A.H.S., R.A.
- GIBBS, A. N. G. (1879). 52, Whiteladies Road, Clifton, Bristol.
- GIBSON, W. A. (1888).
- GILBERT, H. P. (1873). Aston Clinton, Tring.
- GILBERT, L. (1892).  
w 1892-3. 1st Year Student, Half 2nd Coll. Prize.  
A.H.S.
- GILBERTSON, W. (1889). B.A. Cantab.
- GILDER, S. E. A. (1875). 16, Salisbury Gardens, Tunbridge Wells.
- GILES, F. W. (1873). Hotel Continental, Cannes, France. M.B. Durh.
- GILL, J. (1872). 24, Pembroke Road, Clifton, Bristol. M.D. Brux.
- GILLAM, J. B. (1888). Holt, Norfolk. B.A., M.B., B.C. Cantab.
- GILLARD, C. R. (1872). 879, Dorchester Street, Montreal, Canada. M.D., C.M. Montreal.
- GILMOUR, J. H. (1870). Hurst Lodge, Hurstbourne - Tarrant, Andover, Hants.
- GIMLETTE, G. H. D. (1873). Surg.-Major Bengal Army. M.D., M.Ch. R.U.I.  
w 1876-7. Physical Society's 3rd Year's Prize.  
H.P., R.A., H.S., A.H.S.
- GIMLETTE, J. D. (1885). Silengsing, Pahang, Malay Peninsula.
- GIMLETTE, T. D. (1874). Fleet Surg. R.N.
- GIRDLESTONE, H. E. (1886). 5, Haycroft Road, Brixton.
- GODDARD, B. (1885). 27, Pentonville Road, and 106, Highbury New Park.
- GODDARD, E. (1859). North Lynn, 106, Highbury New Park. M.D. Durh.  
1860. Matriculation Examination, Classics &c., Prize.
- GODFREY, A. E. (1881). Lansdowne, Woodside Park, North Finchley. M.B. Lond.  
s 1883. 2nd Year Student, 2nd Coll. Prize.  
w 1883-4. 3rd Year Student, 2nd Coll. Prize.  
H.P., A.H.P., R.A. Clin. Asst. Ear Dept.
- GODFREY, H. J. C. (1878). 7, Manor Street, Bridlington Quay, Yorks.
- GODFREY, T. H. (1882). M.B. Durh.; D.P.H. Cantab.
- GOLDSMITH, J. (1854). Lee-on-the-Solent, Gosport, Hants. M.D. St. And.
- GOOD, J. W. (1877). Winnipeg, Canada.
- GOODY, E. S. (1881). 11, East Parade, Llandudno. F.R.C.S.  
w 1882-3. 2nd Year Student, 3rd Coll. Prize.  
s 1883. 2nd Year Student, 1st Coll. Prize.  
H.S., A.H.S., A.H.P.
- GOODE, H. N. (1891).
- GOODHUE, F. W. J. (1888). Langton, Upton Road, Watford. B.A. Cantab.
- GORDON, B. (1881). 11, Manor Park Parade, Lee.
- GORNALL, J. G. (1888). Sylvan Cottage, Knutsford Road, Warrington, M.A., M.B., B.C. Cantab.
- GORST, H. (1878). Huyton, Liverpool.
- GOULSTON, A. (1877). 2, Homefield Place, Heavitree, Exeter. M.A. Cantab.
- GOVER, H. J. (1875). Littlebury, Saffron Walden, Essex. M.A., M.B. Cantab.
- GOVER, L. D. (1884). 30, Bernard St., Russell Square.  
Clin. Asst. Ear Dept.



- GRABHAM, G. W. (1854). Mathyns, Witham, Essex. M.D. Lond.; M.R.C.P.  
1855. Matriculation Scholarship.
- GRABHAM, M. (1888). Kingston, Jamaica, W. Indies. M.B., B.C. Cantab.
- GRABHAM, M. C. (1858). Madeira. M.D. Aberd.; F.R.C.P. Lond. H.S.
- GRAHAM, V. (1889). Calmswood House, Dewsbury.
- GRANT, A. J. (1888).
- GRANT, J. W. G. (1884). 7, Old Burlington Street.
- GRANT-WILSON, C. W. (1887). Heathfield House, Streatham Common. Obst. H.P.
- GRAY, C. (1855). Surg.-Maj. Army (retired).
- GRAYDON, A. (1886). 124, Cornwall Road, Notting Hill.
- GREAVES, C. A. (1860). 84, Friar Gate, Derby. M.B., LL.B. Lond.; A.A. Oxon.  
1861. 1st Year Student, Treasurer's Prize.  
1862. 2nd Year Student, 2nd Coll. Prize; Physical Society's Prize.  
1863. 3rd Year Student, 1st Coll. Prize; Physical Society's Prize; Cheselden Medal.  
H.S., R.A.
- GREAVES, H. (1888). Hankelow, Audlem, Chesh. B.A., M.B., B.C. Cantab.
- GREEN, A. (1886). 1, Walker Terr., Gateshead-on-Tyne. M.B. Durh.
- GREEN, C. D. (1879). Addison House, Upper Edmonton. M.D., B.S. Lond.; F.R.C.S. Eng.  
w 1879-80. 1st Year Student, The Wm. Tite Scholarship.  
s 1880. 3rd Coll. Prize.  
w 1880-1. 1st Coll. Prize.  
s 1882. 1st Coll. Prize.  
H.S., A.H.S., H.P., A.H.P., R.A.
- GREEN, E. C. (1877). 27, Friar Gate, Derby.
- GREENE, F. W. (1852). Isipingo, Durban, Natal.
- GREENFIELD, W. S. 7, Heriot Row, Edinburgh. M.D., F.R.C.P. Lond.; F.R.C.P. Edin.; F.R.S.E.; Prof. of Path. and Clin. Med. Univ. Edin. Assist. Phys., Med. Registr. and Lect. on Path. Anat.
- GREENWOOD, J. W. (1867). Peel House, Hanley, Staffs. M.D. St. And.
- GREGORY, S. (1880). Hadfield House, Birchanger Road, South Norwood.
- GRESSWELL, G. (1889). 395, Cleethorpe Rd., Gt. Grimsby, Linc. M.A. Oxon.; M.A. Cape of Good Hope.
- GRIEVE, W. D. (1885). 47, Buccleuch St., Dumfries. M.B., C.M. Edin.
- GRIFFITH, A. L. (1856). 606, Harrow Road. M.D. St. And.
- GRIFFITH, W. S. (1886). Kimberley, Cape Colony. M.B., B.C. Cantab.; F.R.C.S.  
H.S., Clin. Asst. Skin Dept.
- GRIFFITHS, F. A. Ingleton, Lancaster, Yorks.
- GRIMBLY, R. (retired).
- GRIMBLY, R. H. (1872). Newton Abbot, S. Devon.
- GROOME, W. W. (1876). Suffolk House, Maple Road, Surbiton. B.A., M.D. Cantab.  
H.P., A.H.P.
- GROSE, S. (1856). Valetta, Thurlow Road, Torquay. M.D. St. And.; F.R.C.S.
- GRÜNBAUM, A. S. F. (1887). Univ. Coll., Liverpool. M.A., M.D., B.C. Cantab.; M.R.C.P.  
1893. Grainger Testimonial Prize.  
H.P., Clin. Assist. Skin Dept.
- GURNEY, H. (1880). Stour House, Dovercourt, Essex.
- GURNEY, R. A. F. (1848). Thame, Oxon.  
1851. Practical Midwifery, Prize.
- HACON, E. D. (1836). 269, Mare St., Hackney. F.R.C.S.
- HAGUE, J. T. (1874). 320, Brixton Road.
- HAGUE, S. (1862). 325, Southampton Street, Camberwell. LL.B. Lond.; M.D. St. And.  
1863. 1st Year Student, 2nd Coll. Prize. Medical Registrar.
- HAIG, F. M. (1882). 2, Warwick Row, Coventry. M.A., M.D., B.C. Cantab.  
H.P.
- HAIG-BROWN, C. W. (1877). Dean Lodge, Godalming, Surrey. M.D., C.M. Aberd. Med. Off. Charterhouse Sch.  
s 1878. 1st Year Student, 2nd Coll. Prize.  
w 1878-9. 2nd Year Student, 2nd Coll. Prize.  
w 1880-1. The Cheselden Medal.  
H.P., A.H.P., H.S., A.H.S.
- HAINES, A. (1886). St. Just, Tenbury, Worc.
- HAINES, E. (1890). Raughmere, Lavant, Chichester. Surg. R.N.

- HAINWORTH, E. M.** (1888). Royal Infirmary, Hull. M.D., B.S., B.Sc. Lond., F.R.C.S.  
w 1888-9. 1st Year Student, 1st Entrance Science Scholarship.  
s 1889. 1st Year Student, 2nd Coll. Prize.  
w 1890-1. 3rd Year Student, 1st Coll. Prize.  
s 1891. 3rd Year Student, 1st Coll. Prize.  
H.S., A.H.S., H.P.
- HAIRSINE, H.** (1872). Roose House, Upp. Tooting.
- HAKIM, H. M.** (1880). Surg.-Maj. I.M.S., Madras.
- HALL, J. B.** (1892). General Infirm., Leeds. M.A., M.B., B.C. Cantab.; Res. Casualty Off. Gen. Infirm. Leeds.
- HALL, J. L.** (1873). Surg.-Maj. Army.
- HALL, J. S.** (1891). 34, De Vere Gdns. Clin. Asst. Skin Dept.
- HALL, R. D. G.** (1873). The Lilacs, Arundel Road, Littlehampton, Sussex.
- HALL, R. H.** (1890). De Grey Lodge, Woodhouse Lane, Leeds. M.A., M.B., B.C. Cantab.
- HALL, S. H.** (1894). 3, Crescent, Carlisle. M.B., C.M. Edin.
- HALLILAY, R. P.** (1887). 26, Moorland Road, Leeds.
- HALLIWELL, T. O.** (1889). Blagdon, Bristol. Clin. Asst. Throat Dept.
- HAMERTON, G. A.** (1869). 3, Southampton St., Covent Gdn. M.D. Brux.; F.R.C.S. Eng. D.P.H.
- HAMMOND, J. H.** (1847). 11, Winckley Square, Preston, Lanc. M.D. Aberd.; M.R.C.P., J.P. 1850. Medical Cases, President's Prize.
- HANBURY, W. R.** (1889). County Asylum, Dorchester.
- HANLY, E.** (1886). 1, Palace Court, Kensington Gardens. M.D., M.Ch. R.U.I.
- HANNAH, F. R.** (1882). 66, Jackson Road, Holloway.
- HANSON, J.** (1877). Adelaide, South Australia.
- HANWELL, G. L.** (1888). Royal Berkshire Hospital, Reading. Clin. Asst. Throat Dept.
- HARCOURT, G. R.** (1888). Asst. Med. Off. Lambeth Infirmary. Clin. Asst. Skin Dept.
- HARCOURT, J. C.** (1891). Woodford Green.  
w 1891-2. 1st Year Student, The Wm. Tite Scholarship.  
s 1892. 1st Year Student, 2nd College Prize.  
s 1893. 2nd Year Student, 1st College Prize.  
s 1894. 3rd Year Student, 1st College Prize.
- HARDING, H. W.** (1889). London County Asylum, Hanwell. H.S., A.H.S.
- HARDING, J. A.** (1857). Osman House, 118, Cromwell Rd., Bristol (retired). 1859. Clinical Medicine, 2nd Prize. 1860. Clinical Assistant (Medicine), 1st Prize.
- HARDWICK, H. G. C.** (1889). B.A. Cantab.
- HARDYMAN, C. E.** (1866). Hill House, Bramerton, Norwich (retired). M.D. Durh.; F.R.C.S. Edin. H.S.
- HARE, E. H.** (1872). 46, Weston Park, Crouch End. M.A. Oxon.; F.R.C.S. Eng. A.H.P.
- HARFORD-BATTERSBY, C. F.** (1887). 14, Earlham Grove, Forest Gate. M.A., M.D., B.C. Cantab.
- HARLEY, J.** 9, Stratford Place. M.D., F.R.C.P. Lond.; Cons. Phys. St. Thos. Hosp.; Cons. Phys. Lond. Fev. Hosp.
- HARMAN, L.** (1889). Shalmsford, Brixton Hill. M.B. Durh.
- HARPER, J.** (1889). 84, Barcome Avenue, Streatham Hill.
- HARPER, J. R.** (1886). 3, Union Street, Barnstaple, Devon. H.S., A.H.S., R.A., S.O.C.
- HARPER, R.** (1842). 18, Park Road, West Dulwich (retired). J.P. 1845. Physical Society's Essay, Prize; Dresser's Clinical Surgery, Prize.
- HARPER, R. R.** (1872). Holbeach, Linc.
- HARPER, W. J.** (1887). Bloomfield, Branton, N. Devon.
- HARRIS, F. A.** (1874). Surg. Maj. Army.
- HARRIS, J. E.** (1887). 46, Marsham Street, Westminster. B.A., D.Sc. Lond.  
w 1887-8. 1st Year Student, 1st Entrance Science Scholarship.
- HARRIS, J. B.** (1864). Glenavon, Braddon Road, Southsea. M.D. Durh.
- HARRIS, W.** (1865). Res. Med. Supert. Norwich City Lunat. Asyl., Helleston, Norwich. F.R.C.S., M.R.C.P. Edin.

- HARRIS, W. J. (1881). 44, Wellington Square, Hastings.
- HARRIS BICKFORD, A. (1855). Veor Villa, Camborne, Cornwall. M.D. St. And.
- HARRISON, A. (1878). Hermosa Road, Teignmouth, Devon.
- HARRISON, H. M. (. 889). B.A. Cantab.
- HARTLEY, H. (1878). Stone, Staffords.
- HARVEY, E. (1877). Hamilton, Bermuda, W. Indies.
- HARVEY, S. F. (1875). 117A, Queen's Gate, South Kensington.
- HARVEY, T. (1863). 6, Montague Place, Poplar.
- HASLAM, H. C. (1893). 15, Lindfield Gardens, Hampstead. B.A., M.B., B.C. Cantab.
- HASLAM, J. N. (1833). Niel Lodge, Dagnall Pk., Selhurst.
- HASLAM, W. F. (1874). 33, Paradise St. Birmingham, and 24, York Road, Edgbaston. F.R.C.S., Demonstr. of Anatomy Mason Coll. Birmingham, Surgeon Birmingham General Hospital. Examiner in Anatomy for Fellowship R.C.S.  
s 1876. 2nd Year Student, 1st Coll. Prize.  
w 1877-8. The Cheselden Medal.  
Demonstrator of Anatomy, H.P., A.H.P., H.S., A.H.S., R.A.
- HATCHETT, F. W. (1879). 6, Upper Cheyne Row, Chelsea.
- HATHAWAY, C. (1836). 11, Edward Road, St. Leonards-on-Sea. M.D. Aberd.
- HATHERELL, R. R. (1884). Hatch Beauchamp, Somers. M.A. Cantab.
- HATTON, G. S. (1875). Hanover House, Newcastle-under-Lyme. M.D., M.S. Durh.; F.R.C.S. Edin.  
w 1876-7. 2nd Year Student, Prosector's Prize.  
H.P., A.H.P.
- HAVILAND, A. Douglas, Isle of Man.  
Late Lect. on Geography of Disease.
- HAWARD, H. H. (1890). Chattisham Hall, Ipswich. B.A., M.B., B.C., Cantab.  
Chin. Asst. Skin Dept.
- HAWKINS, H. P. (1882). 109, Harley Street, Cavendish Square. M.A., M.D. Oxon., F.R.C.P., Asst. Phys. to, Demonstr. of Morbid Anatomy and Lecturer on Pathology at, St. Thos. Hosp. Dean of Med. School.  
w 1882-3. 1st Year Student, The William Tite Scholarship.  
w 1883-4. 2nd Year Student, The Peacock Scholarship.  
w 1884-5. 3rd Year Student, 2nd tenure of Peacock Scholarship and 1st Coll. Prize.  
Res. Asst. Phys., H.P., A.H.P., Radcliffe Travelling Fellow, Oxford, 1886.
- HAWKINS, W. (1870). The Vicarage, Abbotsbury, Dorchester.
- HAYASHI, K. (1892). Tokyo, Japan.
- HAYDON, T. H. (1888). Marlborough. B.A., M.B., B.C. Cantab.  
H.S., A.H.S., Obst. H.P. and Demonstr. of Pract. Surg.
- HAYMES, H. E. (1891). Royal Berks. Hospital, Reading.
- HAYWARD, J. (1857).
- HEATHER, B. G. (1886). Surg. R.N.
- HEAVEN, J. C. (1879). 17, Whiteladies Road, Clifton, Bristol. D.P.H., Lect. on Hygiene S. Kensington, and Demonstr. of Hygiene Univ. Coll. Bristol.
- HEELIS, R. (1876). Church Street, Lenton, Nottingham. M.D. Durh.  
s 1877. 1st Year Student, 2nd Coll. Prize.  
s 1878. 2nd Year Student, 2nd Coll. Prize.  
A.H.P.
- HEFFERNAN, H. H. (1883). The Grove, Caldicot, Mon.  
w 1883-4. 1st Year Student, 2nd Coll. Prize.
- HEFFERNAN, W. H. (1881). 100, Broomwood Road, Wandsworth Common.
- HEIN, G. G. B. (1884). Peterson Road, Wakefield.
- HELSHAM, H. P. (1882). Beccles, Suffolk.
- HELSHAM, W. M. (1882). Richmond, New South Wales.
- HEMINGWAY, J. (1885). 16, Merton Road, Wimbledon.
- HENDERSON, W. D. (1884). 2, Bank Buildings, Kingswood, Bristol.
- HENRY, R. (1885). Surg. P. & O.
- HENSLOWE, F. W. D. (1871). Elm Tree Villa, Victoria St., Dunstable, Beds.
- HENTSCH, J. P. (.870). 369, Coldharbour Lane, Brixton.
- HERBERT, W. (.890). 6, Lancaster Place, Hill Rise, Richmond.

- HERSCHELL, G. (1874). 27, Queen Anne Street. M.D. Lond.
- HEWAN, J. (1880). Cinnamara P.O., Jorhât, Upp. Assam, India.
- HEWETT, J. W. (1888). Medical Missionary, China Inland Mission, Pingyang, Shansee. A.H.S.
- HEYGATE, F. N. (1874). The Elms, Wisborough Green, Billingshurst.
- HEYGATE, W. N. (1861). 12, Bennett Street, Bath. R.A.
- HEYWOOD, C. C. (1887). Irlams-o'-th'-Height, nr. Manchester. M.A., M.B., B.C. Cantab.  
s 1888. 3rd Year Student, 2nd Coll. Prize  
Clin. Asst. Throat Dept.
- HICHENS, P. S. (1892). St. Thomas's Hospital. M.A., M.B., B.Ch. Oxon.  
w 1893-4. 3rd Year Student, 1st College Prize.  
H.P. Ophth. H.S.
- HICKS, Rt. Rev. J. W. (1858). Bloemfontein, Orange Free State. M.D., F.R.C.P.  
1859. 1st Year Student, Treasurer's 1st Prize.  
1860. 2nd Year Student, 1st Coll. Prize; Physical Society's Prize.  
1861. 3rd Year Student, 1st Coll. Prize; Physical Society's Prize; Cheselden Medal; Treasurer's Gold Medal.
- HICKS, T. W. (1887). Park House, East Finchley. M.B. Lond.  
H.P., Obst. H.P., Clin. Asst. Throat Dept.
- HIGHTON, T. (1869). Green Hill House, Normanton Road, Derby. H.P.
- HILDYARD, N. (1879).
- HILEY, R. F. (1884). Pilley's Island, Notre Dame Bay, Newfoundland.
- HILL, D. P. S. (1892). Larne, co. Antrim. M.B., B.Ch., B.A.O., R.U.I.
- HILL, E. B. (1883). Royal Hospital, Richmond. B.A., M.B., B.C. Cantab.
- HILL, R. A. L. (1890). The General Infirmary, Chichester.
- HILLIAM, W. P. (1893). Wyke, nr. Bradford, Yorks.
- HILLYER, W. H. (1882). Ellerslie, Buckden, Hunts.
- HINDLEY, G. J. D. (1895). B.A. Oxon.
- HINNELL, J. S. (1882). 62, Garland Street, Bury St. Edmund's. B.A., M.D., B.C. Cantab.  
Ophth. Asst.
- HITCHCOCK, H. K. (1866). Christowell, Branksome Park, Bournemouth. M.D. Brux.; J.P.
- HOAR, C. (1879). The Grove, Robertsbridge, Sussex. M.B., C.M. Aberd.
- HOBHOUSE, E. (1884). 36, Brunswick Place, Brighton. M.D., B.Ch. Oxon.; M.R.C.P.  
w 1885-6. 3rd Year Student, 2nd Coll. Prize.  
H.P., A.H.S.
- HOCKRIDGE, T. G. (1879). 27, Tysoe St., Wilmington Sq., M.D., C.M. McGill, Montreal.
- HODGES, H. B. (1853). Glenaveril, Knebworth, and Watton Cottage, Watton, Herts.
- HODGES, H. C. (1878). Watton, Herts.
- HODGSON, C. (1887). Mitcham Lane, Streatham.
- HODGSON, W. (1871). Gatefield House, Crewe, Chesh.
- HODSON, T. (1858). Ingatestone, Essex.
- HOLBERTON, H. N. (1876). Chetwynd, Palace Road, East Molesey, Surrey. D.P.H.  
w 1876-7. 2nd Entrance Science Scholarship, and 2nd Coll. Prize.  
w 1877-8. 2nd Year Student, 1st Coll. Prize.  
A.H.P.
- HOLDING, C. (1829). 121, Victoria St., Westminster. F.R.C.S.
- HOLLAND, E. W. (1878). B.A. Cantab.
- HOLLOWAY, R. (1876). Edgecumbe House, Brockhurst, nr. Gosport.
- HOLMES, E. R. (1895). Russell House, Shifnal, Salop. M.B., C.M. Edin.
- HOME, A. L. (1889). 153, Goldhurst Terrace, South Hampstead.  
w 1894-5 Bristowe Medal.  
H.S., A.H.S. Obst H.P.
- HOOD, N. L. (1891). Sussex Co. Hosp., Brighton. B.A., M.D., B.C. Cantab.
- HOOPER, A. W. (1889). Ashdene, Burnt Ash Hill, Lee. A.M.S.
- HOOPER, J. H. (1857). 139, Burnt Ash Hill, Lee. M.D., M.S. Lond.; F.R.C.S.  
1859. 2nd Year Student, Coll. Prize.
- HOPE, G. (1881). Grosvenor House, Ealing Dean.
- HOPKINSON, E. (1893). B.A. Oxon.  
Ophth. H.S. Clin. Asst. Ear Dept.
- HORLEY, W. L. (1851). Stanboroughs, Hoddesdon, Herts. (retired).
- HOUGH, C. H. (1875). Full St., Derby.
- HOUGH, J. (1836). Grange Road, Cambridge. F.R.C.S., J.P.
- HOUGHTON, L. (1873). 2, Sussex Square, Brighton.



- HOULGRAVE, A. (1880). 23, Great George's Rd., Waterloo, Liverpool.
- HOUNSELL, F. C. W. (1881). Dower House, Bugbrooke, Northants. B.A. Cantab.  
Ophth Asst.
- HOUSE, F. M. (1883). Katauning, Western Australia.
- HOW, A. B. (1883).
- HOWELL, T. S. (1841). The Old Vicarage, Wandsworth.
- HOWLETT, G. D. (1891). 95, Balham Park Road.
- HOWSE, W. (1856). 8, London Street, New Swindon, Wilts.
- HUBBARD, A. J. (1876). Durrance House, Hemel-Hempstead, Herts. M.D. Durh.
- HUDSON, H. (1882). Mannargudi, Tanjore, S. India.
- HUDSON, J. S. (1888). Asst. Res. Med. Off. Consump. Hosp., Brompton.
- HUDSON, O. H. (1881). Meersbrook Bank, Chesterfield Road, Sheffield.
- HUGHES, A. E. P. (1884). Camberwell Workhouse Infirmary.  
Ophth. H. S.
- HUGHES, R. (1889).
- HULBERT, H. H. (1884). 19, Bishop's Terrace, Fulham Palace Road. B.A. Oxon.  
H.S., A.H.S., Clin. Asst. Throat and Ear Depts., Asst. Teacher of Pract. Surg.
- HULL, W. (1878). Cootamundra, N. S. Wales. M.D. Lond.  
w 1878-9. 2nd Entrance Science Scholarship.  
w 1881-2. The Mead Medal.  
H.P., A.H.P., H.S., A.H.S., R.A.
- HUME, F. H. (1860). 53, Devonshire Street, Islington. M.D. St. And.
- HUME, F. N. (1871). Med. Superint. Northern Hosp., Winchmore Hill.
- HUNT, J. A. (1872). Brookfield, Borrowash, Derbysh.  
w 1874. Prosecutor's Prize.
- HUNT, J. P. (1886). Surg.-Maj. Army. M.D. Glasg., F.R.C.S.I.
- HUNTLEY, L. (1842). 79, Freshfield Road, Kemp Town, Brighton.
- HUSKINSON, H. (1888). Surg. R.N. M.B. Durham.
- HUTCHINSON, J. A. (1883). Northalerton, Yorks. M.D., M.S. Durh.
- HUTTON, H. R. (1875). 8a, St. John Street, Manchester. M.A., M.B. Cantab.  
Demonst. of Physiol., Asst. Demonst. of Pract. Path. and H.P.
- IDESON, J. J. (1857). The Poplars, Colne, Lancash.
- ILES, A. R. (1872). Shutterne House, Taunton, Somers.
- ILES, D. (1861). Fairford, Glouc.
- ILLINGWORTH, J. A. (1856). Brig.-Surg. Army (retired).
- INGLIS, W. W. (1863). Glendower, Queen Anne Av., Bromley, Kent. M.D. Heidelb.  
1864. 1st Year Student, 2nd Coll. Prize.  
1865. 2nd Year Student, 2nd Coll. Prize.  
1866. 3rd Year Student, 3rd Coll. Prize;  
Cheselden Medal.  
Medical Registrar and H.S.
- IRVING, D. B. (1879). Vancouver, Brit. Columbia, Canada.
- ISAACS, E. P. (1885). 36, Leyland Road, Lee.  
Ophth. H.S.
- IVES, R. (1854). Chertsey Lodge, Portsmouth, Southampton.
- JACKSON, J. (1868). 15, Huntingdon Street, Barnsbury.
- JAFFE, C. S. (1887). 138, Sutherland Avenue, Maida Vale. M.D., B.S. Lond.  
w 1887-8. 1st Year Student, Half 2nd Coll. Prize.  
H.P., Obst. H.P., Clin. Asst. Throat Dept. Salters' Company Research Fellow.
- JAMES, C. H. (1883). Surg.-Capt. Bengal Army.  
w 1887-8. Solly Medal and Prize.  
H.S., A.H.S., R.A.
- JAMES, F. C. (1889). 48, Tregunter Road, South Kensington.
- JAMES, J. M. (1885). 647, Queen's Road, Heeley, Sheffield.
- JAMES, S. (1886). Violet Hill, Simla, India.
- JARDINE, J. L. (1846). Capel, Dorking, Surrey.  
1850. Medical Reports, Dr. Roots' Prize.  
H.S.
- JARVIS, J. (1881). 38, Gay Street, Bath.
- JEFFERSON, A. J. (1874). 2, West St., Rochdale. M.D., B.S. Lond.
- JEFFERSON, T. J. (1860). Market Weighton, Yorks. M.D. Aberd. H.S.
- JEFFREYS, A. (1886). Giants' Grave, Briton Ferry, Neath, S. Wales.



- JEFFREYS, J. G. (1874). 24, Barrowgate Road, Chiswick. M.D. Durh.
- JEFFREYS-POWELL, J. P. (1874). Senny Bridge, Brecon, S. Wales.
- JENNER, L. L. (1890). 4½, Bloomsbury Square. M.A., M.B., B.Ch. Oxon.; M.R.C.P. Supt. of Clinical Laboratory, Demonstrator of Morbid Histology and Bacteriology.  
s 1892. 3rd Year Student, 2nd Coll. Prize. H.P.
- JOHNS, W. S. (1871). Caterham Valley, Surrey.
- JOHNSON, C. G. (1869). Harpur Villa, Bedford.
- JOHNSON, W. G. (1852). 68, High Street, Bedford.  
1855. Comparative Anatomy, Prize.
- JOHNSTON, G. D. (1879). Georgia St., Vancouver, British Columbia, Canada.  
w 1882-3. 4th Year, Cheselden Medal. H.P., H.S., A.H.S., R.A., Ophth. Clin. Asst.
- JOHNSTON, T. (1878). Barnstaple, North Devon.
- JOLLY, S. B. (1879). Godstone House, West Hill, Sydenham. M.B. Cantab.
- JONAS, H. C. (1891)  
w 1896-7. 5th Year Student, The Mead Medal. H.P.
- JONES, A. W. (1885). Paddington High School. M.A. Oxon.  
s 1888 3rd Year Student, 1st Coll. Prize.
- JONES, B. S. (1884). 16, Kendoa Road, Clapham.
- JONES, C. E. (1891).  
Clin. Asst. Throat Dept.
- JONES, C. M. (1870). Glantaff House, Troedyrhiw, Glamorg. R.A.
- JONES, E. (1855). Ty-mawr, Aberdare, Glam. J.P.
- JONES, E. J. T. (1880). Ty-mawr, Aberdare, Glamorg.
- JONES, H. T. (1886). Harlech House, Pembroke, S. Wales.
- JONES, J. T. (1870). Hornsea, Hull.
- JONES, R. W. (1864). 77, Vauxhall Bridge Rd.
- JONES, SYDNEY (1850). 18, Portland Place. M.B. Lond.; F.R.C.S. Eng.; Consulting Surg. to St. Thos. Hosp.  
1851. Matriculation Scholarship, Prize;  
1st Year Student, Scholarship.  
1852. 2nd Year Student, Scholarship. Descriptive Anatomy, Prize.  
1853. 3rd Year Student, Scholarship. Late Member of Council, Royal College of Surgeons. Late Surg., Lect. on Surg., on Descrip. Surg., Surg. Anat., Ophth. Surg. and on Comp. Anat., Cur. of Mus., Demonst. of Healthy and Morbid Anat. at St. Thos. Hosp.
- JONES, S. H. (1881). 16, Kendoa Road, Clapham. M.B., B.S. Lond.; F.R.C.S.  
w 1881-2. 1st Year Student, 1st Entrance Science Scholarship.  
The William Tite Scholarship.  
w 1882-3. 2nd Year Student, Half Musgrove Scholarship and 1st Coll. Prize combined.  
Prosecutor's Prize.  
w 1883-4. 3rd Year Student, 2nd tenure of Half Musgrove Scholarship, with 1st Coll. Prize.  
s 1884. 3rd Year Student, Half 1st and 2nd Coll. Prizes.  
w 1884-5. 4th Year Student, The Cheselden Medal.  
Treasurer's Gold Medal.  
H.S., A.H.S., Clin. Asst. Ear and Skin Depts.
- JONES, T. J. (1882). Langstone Court, nr. Ross, Hereford. B.A. Cantab., M.B., C.M. Edin.
- JONES, T. M. (1845). Kilby House, Loughor, Glamorg.
- JONES, W. W. (1877). Pinehurst, Barlow Moor Rd., Didsbury, Manchester. M.A., M.B. Oxon., B.Sc. Lond.  
w 1877-8. 1st Year Student;  
1st Entrance Science Scholarship; £60;  
The William Tite Scholarship.  
w 1877-8. 1st Year Physical Society's Prize.  
s 1878. 1st Year Student, 1st Coll. Prize.  
w 1878-9. 2nd Year Student, The College Scholarship.  
s 1879. 2nd Year Student, 2nd Coll. Prize.  
w 1879-80. 3rd Year Student, 2nd tenure of Coll. Scholarship, and 1st Coll. Prize.  
w 1880-1. The Mead Medal;  
Treasurer's Gold Medal.  
H.P., H.S., A.H.S., R.A.: Radcliffe Travelling Fellow, Oxford, 1880.
- JOTHAM, E. (1843). 270, Camden Road.
- JOTHAM, E. S. (1855). 63, Roe St., Macclesfield.
- JOTHAM, G. W. (1870). Shag Rock, Port St. Mary, Isle of Man. M.D., C.M. Aberd.
- JULIUS, H. A. (1886). Surg. R.N.
- KAI, HO (1875). 3, Elgin St., Hong Kong, China. M.B., C.M. Aberd.
- KAKA, S. M. (1884). Karachi, India.
- KAPADIA, S. A. (1881). 40, Glazbury Road, W. Kensington. M.D. Brux.
- KAVANAGH, P. J. F. (1887).
- KEATES, W. C. (1869). 22, East Dulwich Road.
- KEELE, C. F. (1857). 3, Dyneham Rd., West Hampstead.

- KEELE, G. T. (1851). 81, St. Paul's Road, Highbury.
- KEELE, J. R. (1879). 3, Sussex Place, Southampton.
- KELLER, H. L. A. (1884). Elm House, Hornsey. B.A. Oxon.
- KELLOCK, T. H. (1886). 5, Lansdowne Place, Brunswick Square. M.A., M.D., B.C. Cantab.; F.R.C.S. Asst. Surg. Middlesex Hosp. and Hosp. for Sick Children.  
w 1889-90. 4th Year Student; The Cheselden Medal.  
H.S., A.H.S., H.P.
- KEMPE, C. M. (1859). Chantry House, New Shoreham, Sussex.
- KENT, P. W. (1890).  
H.S., A.H.S., Clin. Asst. Ear Dept.
- KER, J. E. (1880). Asst. Surg., Colonial Hosp., Gibraltar.
- KERR, G. D. (1883). 14, Burlington Street, Kemp Town, Brighton.
- KERR, J. K. (1876). Glenaltans, Knock, Belfast. M.D., M.Ch. R.U.I.
- KESE, J. S. (1880). 11, Harley Street, Cavendish Square. M.D. Bâle; F.R.C.S. Eng.
- KEYWORTH, J. W. (1847). Moonta, S. Australia. M.D. Lond.  
1848. *Materia Medica*. Prize;  
1849. *Midwifery*, 3rd Prize;  
Physical Society's Essay, Prize.  
1850. *Ophthalmic Reports*, a Governor's Prize;  
Essay on Neuralgia, Mr. Newman Smith's Prize.  
1851. *Comparative Anatomy*. Prize;  
Clinical Medicine, Prize;  
Surgical Reports, Prize;  
Midwifery, Prize;  
Medical Reports, Prize;  
Pathology, Prize;  
Physical Society's Essay, Prize.
- KIDD, H. C. (1881). Bromsgrove, Worc. M.B. Lond.; F.R.C.S.  
w 1881-2. 1st Year Student, 3rd Coll. Prize.  
H.S., A.H.S., A.H.P. Clin. Asst. Ear Dept.
- KILHAM, C. S. (1880). 1, Barber Road, Crookesmoor, Sheffield.
- KILNER, W. J. (1869). 218, Ladbroke Grove, N. Kensington. B.A., M.B. Cantab.; M.R.C.P.  
Electrician
- KING, A. (1886). Cradock, Cape Colony.  
w 1886-7. 1st Year Student, 1st Coll. Prize.  
s 1887. 1st Year Student, 1st Coll. Prize.  
s 1888. 2nd Year Student, 1st Coll. Prize.  
w 1888-9. 3rd Year Student, 3rd Coll. Prize.  
s 1889. 3rd Year Student, 1st Coll. Prize.  
w 1889-90. 4th Year Student; Treasurer Gold Medal.  
H.P.
- KING, A. F. W. (1889). Cheriton, Epsom. Surg.-Lt. I.M.S.  
Clin. Asst. Throat Dept.
- KING, P. (1884). 27, Gay Street, Bath. B.A., M.D., B.C. Cantab.
- KINGSFORD, B. H. (1888). Woking, Surrey. M.B. Lond.
- KINNERSLY, G. E. (1888). French Hospital, Shaftesbury Avenue.
- KIRKPATRICK, J. M.D. Toronto.
- KISCH, A. (1861). 61, Portsdown Road, Maida Vale.
- KITCHING, J. L. W. (1878). Cobham, Surrey.
- KNAGGS, R. H. E. (1873). Diego Martin, Trinidad, W. Indies.
- KNIGHT, H. (1888). Morholme, Woking.
- KNOCKER, W. D. (1889). Tower Hamlets Dispensary.  
Clin. Asst. Skin and Electr. Depts.
- LABEY, J. (1880). The Homestead, Grouville, Jersey.
- LAKE, R. (1880). 19, Harley Street, Cavendish Square. F.R.C.S.  
w 1881-2. 2nd Year Student, Prosecutor's Prize.  
Clin. Asst. Ear Dept.
- LAKE, W. W. (1872). Topcroft, Guildford, Surrey. D.P.H.  
Obst. H.P.
- LAMBERT, F. S. (1885). Balgowan, Newland, Lincoln.
- LAMBERT, T. W. (1887). Kamloops, British Columbia, Canada. M.A., M.B., B.C. Cantab.  
H.S., Clin. Asst. Skin Dept.
- LANCASTER, J. (1890). Surg.-Lt.-Col., I.M.S. Madras.
- LONDON, E. (1871). Dominion S.S. Co.
- LANGTON, C. B. T. (1883).
- LANKESTER, A. C. (1885). Amritsur, India. M.D. Lond.  
w 1885-6. 1st Year Student, 1st Coll. Prize.  
w 1886-7. 2nd Year Student, Half 1st and 2nd Coll. Prizes.  
w 1888-9. 4th Year Student, The Cheselden Medal.  
H.S., A.H.S.
- LANKESTER, F. J. (1882). 13, Belvoir Street, Leicester. D.D.S. Penna.; L.D.S.

- LANKESTER, H.** (1849). 71, Evington Road, Leicester. J.P.  
 1850. 1st Year Student, Scholarship; Descriptive Anatomy, 1st Prize Chemistry, Prize.  
 1851. Physiology, Prize; Materia Medica, Prize; Medicine, Prize;  
 1852. 3rd Year Student, Scholarship; Medical Cases, President's Prize; Medicine, Prize; Surgery, Prize; Surgery and Surgical Anatomy, Cheselden Medal; General Proficiency, Treasurer's Medal.  
 1853. Surgical Essay, President's Prize. H.S.  
**LANKESTER, H. H.** (1880). Church Missionary Society, Salisbury Sqre. M.D. Lond.  
 w 1880-1. Entrance Science Scholarship; 1st Year Student, 2nd Coll. Prize.  
 w 1881-2. 2nd Year Student, The College Scholarship, Two Years.  
 H.P., R.A.  
**LASLETT, M. H.** (1890).  
**LATROBE, F. S.** (1858).  
**LATTER, C.** (1888). 10, Earl's Avenue, Folkestone. B.A., M.D., B.C. Cantab.  
 w 1890-1. 4th Year Student, The Mead Medal.  
 H.P., Obst. H.P.  
**LAUCLAN, C. A.** (1890). 43, Clapham Road. M.D., C.M. Montreal.  
**LAVER, A. H.** (1869). 26, Cemetery Road, Sheffield. M.D. Durh.  
 1870. 1st Year Student, 3rd Coll. Prize.  
 1871. 2nd Year Student, 2nd Coll. Prize.  
 w 1872. 3rd Year Student, 2nd Coll. Prize. Cheselden Medal.  
 H.S., H.P.  
**LAVER, H.** (1854). Head Street, Colchester. J.P.  
**LAVER, J. W.** (1889). High Street, Dedham, Colchester.  
 H.P., Clin. Asst. Skin Dept.  
**LAVER, P. G.** (1886). Head Street, Colchester.  
**LAW, R. R.** (1889). The Maples, Sidcup, Kent. B.A., M.D., B.C. Cantab.  
 H.S., A.H.S., Clin. Asst. Skin Dept.  
**LAWFORD, J. B.** (1879). 99, Harley St., Cavendish Square. M.D. C.M. McGill, Montreal; F.R.C.S., Ophth. Surg. and Lect on Ophthalmology St. Thos. Hosp. Surg. Roy. Lon. Ophth. Hosp.  
 Ophth. Clin. Asst., A.H.P.  
**LAWRIE, T. H.** (1889). St. Clair, Polmont, Stirlingsh.  
**LAWS, C. U.** (1886). 5, South Parade, Newcastle-on-Tyne. M.D. Durh.
- LAWS, W. G.** (1888). 3, East Circus St., Nottingham. M.B., C.M. Edin.; F.R.C.S.  
 Ophth. H.S.  
**LAWSON, R.** (1889). Glenluce Villa, Westcombe Hill, Blackheath.  
 Clin. Asst. Skin Dept.  
**LAWTON, H. A.** (1868). 98, High St., Poole, Dorset. M.D. Durh.; D.P.H.  
**LAXTON, T. L.** (1875). Artillery Camp, Pretoria, Transvaal.  
 w 1876-7. 2nd Year Student, Prosector's Prize.  
**LAYTON, F. G.** (1890). St. Stephen's Vicarage, Hounslow.  
 H.P. Clin. Asst. Ear Dept.  
**LEATHAM H. B.** (1874). New Plymouth, New Zealand.  
**LEDYARD, W. E.** (1870). 223, Post Street, San Francisco, California, U.S.A. M.B. Toronto.  
**LEES, J.** (1859). 21, Brixton Rd. M.D. St. And.  
 Demonstr. of Morb. Anat., Asst. Res. Med. Off., Med. Tutor and Registrar.  
**LEESON, J. R.** (1871). Clifden House, Twickenham, Middlesex. M.D., C.M. Edin.  
 Demonstr. of Anat. and H.P.  
**LEICESTER, T.** (1880). 205, Rye Lane, Peckham.  
**LESSEY, S. S.** (1878). 13, Abinger Rd., Deptford.  
**LEVICK, H. D.** (1887). 9, Cambridge Street, Hyde Park. M.B. B.S. Lond.; F.R.C.S.  
 Jun. Obst. H.P.  
**LEWELLIN, A. J. R.** (1877). Melbourne, Victoria, Australia. M.B., B.Ch. Melb.  
**LEWERS, T. R.** (1880). Lyntonstowe, Berry, New South Wales. M.B., B.Ch. Melbourne.  
**LEWIS, C. M.** (1881). Steyning, Sussex.  
**LEWTAS, J. T.** (1885). Surg.-Lt.-Col. I.M.S. Bengal. Jun. Army and Navy Club, St. James's St. M.D., Lond.  
**LIGHT, E. M.** (1880). 2, Wilton Place, Belgrave Square. M.A., M.B., B.C. Cantab.  
 Clin. Asst. Throat Dept.  
**LIGHTFOOT, W. S.** (1872). Staff-Surg. R.N.  
**LINDSAY, H. S.** (1885). Longreach, Queensland.  
**LINGARD, A.** (1870). Imperial Bacteriologist, Muktesar, Kumâon Hills, N.W.P., India. M.B., M.S. Durh.; D.P.H.  
 H.P.

- LITHGOW, J. M. (1880). 39, Humberstone Road, Leicester. M.D., M.Ch. R.U.I.
- LITTELJOHN, S. G. (1864). Res. Med. Off. Central Lond. Distr. Schools, Hanwell. M.B., C.M. Edin.
- LIVESEY, E. W. (1885). Alderney, Channel Islands.
- LLEWELLYN, D. W. H. (1878). Southborough, Tunbridge Wells.
- LLOYD, A. (1857). 25, Larkhall Rise, Clapham.
- LOCKYER, C. W. (1886). 7, St. Julian's Farm Road, West Norwood.
- LODGE, P. G. (1893). Windrush House, Bradford, Yorks.
- LODGE, S. (1888). 13, Manningham Lane, Bradford, Yorks. M.D., B.S. Durh.
- LOGAN, R. R. W. (1883). Ashby-de-la-Zouch.
- LONGINOTTO, M. J. (1889). Johannesburg.
- LONGMAN, A. (1877). Broad Chalk, Salisbury.
- LONGSTAFF, G. B. (1873). Highlands, Putney Heath, and Twitchen, Morthoe, N. Devon. M.A., M.D., D.P.H. Oxon.; F.R.C.P.; L.C.C. w 1873-4. 1st Year Student, 2nd Coll. Prize. s 1874. 1st Coll. Prize.
- Physical Society's 1st Year's Prize. s 1875. 2nd Year Student, 2nd Coll. Prize. w 1875-6. 3rd Year Student, 1st Coll. Prize. w 1876-7. 4th Year Student, Mead Medal.
- LONNON, F. (1894). Fern House, 77, Denmark Hill. L.D.S.
- LOTZ, H. J. (1882). Fremantle, West Australia. D.P.H.
- Low, H. (1885). 10, Evelyn Gardens, South Kensington. M.A., M.B., B.C. Cantab. Anæsthetist St. Thomas's Hospital. H.P., R.A., S.O.C., Clin. Asst. Skin Dept.
- Low, P. C. (1886). Elmstead, Beulah Road, Tunbridge Wells, Kent. B.A., M.B., B.C. Cantab.
- Low, R. B. (1872). Local Govt. Bd., Whitehall and Helmsley House, Christchurch Road, Tulse Hill. M.D., C.M. Edin.; D.P.H. Cantab.
- Low, W. S. (1887). 50, Herne Hill, and 10, Westminster Bridge Road.
- LUARD, H. B. (1885). Surg.-Capt. Bengal Army. B.A., M.B., B.C., D.P.H. Cantab. F.R.C.S. s 1886. 3rd Year Student, 2nd Coll. Prize. H.P., R.A.
- LUCAS, G. (1863). Uckfield, Sussex.
- LUNN, J. R. (1874). Med. Superint. St. Marylebone Infirm., Notting Hill. F.R.C.S. Edin. H.S., R.A., A.H.S., A.H.P.
- LUSH, J. S. (1872). Ivy Cottage, Market Lavington, Devizes, Wilts. s 1873. 1st Year Student, 3rd Coll. Prize.
- LUSH, W. H. (1869). Prospect House, Market Lavington, Devizes, Wilts. w 1872. 2nd Year Student, Prosector's Prize.
- LYNCH, G. W. A. (1882). Ba, Fiji. M.B., B.C. Cantab.
- LYON, T. G. (1878). 8, Finsbury Circus. M.A., M.D. Cantab.; M.R.C.P. H.P., Clin. Asst. Skin and Ear Depts.
- MACAULEY, W. G. R. (1888). Kings Lynn, Norfolk.
- McCLEAN, J. F. (1893). s 1895. 2nd Year's Student, 1st Coll. Prize.
- MACCORMAC, Sir William, Bart. 13, Harley Street, Cavendish Square. M.A.R.U.I., M.Ch. (hon. causâ), D.Sc., F.R.C.S.I.; Pres. R.C.S. Eng. Cons. Surg. to St. Thomas's Hospital; Emeritus Lecturer on Clinical Surgery.
- MCCULLAGH, R. C. (1887). 179, Shankhill Rd., Belfast. B.A., M.D., M.Ch., R.U.I.
- MCDONNELL, J. O'M. (1879). Surg.-Lt.-Col. Bengal Army (retired). M.D., M.Ch. R.U.I.; F.R.C.S.
- McDOUGALL, W. (1894). M.A., M.B., B.C. Cantab. w 1894-5. 3rd Year Student, University Scholarship. w 1896-7. 5th Year Student, Grainger Testimonial Prize.
- MCDOWELL, D. K. (1886). c/o Messrs. Holt & Co., 17, Whitehall Place.
- MACEVOY, H. J. (1882). 41, Buckley Road, Brondesbury. M.D., B.Sc. Lond. w 1884-5. 3rd Year Student, Half 2nd and 3rd Coll. Prizes. s 1885. 3rd Year Student, Half 1st and 2nd Coll. Prizes. w 1885-6. 4th Year Student, Bronze Mead Medal. H.P., R.A., Clin. Asst. Throat and Ear Depts.
- MCGEAGH, W. S. (1880). 100, Norroy Road, Putney.
- MACGREGOR, R. D. 3, Sandyford Place, Glasgow.
- McILROY, J. B. (1887). Annandale, Sydney, New South Wales.
- MAC KELLAR, A. O. 79, Wimpole Street. M.D., M.Ch., R.U.I., F.R.C.S., Surgeon to, and Sen. Lect. on Pract. Surg. at, St. Thomas's Hospital. Res. Asst. Surg. Lect. on Forensic Medicine.



- MACKENZIE, H. W. G.** (1882). 59, Welbeck St., Cavendish Square. M.A. Edin.; M.A., M.D. Cantab.; F.R.C.P. Lond.; Assistant Physician to St. Thomas's Hospital and to the Hosp. for Consumption, Brompton; Demonstrator of Morbid Anatomy; Lecturer on Pharmacology and Therapeutics and Joint Teacher of Practical Medicine at St. Thomas's Hospital.  
w 1882-3. 3rd Year Student, 3rd Coll. Prize.  
s 1883. 3rd Year Student, 1st Coll. Prize.  
w 1883-4. 4th Year Student. The Mead Medal.  
Resident Assistant Physician, Medical Registrar, H.P., A.H.P., and Clin. Asst. Skin Department.
- MACKINNON, A. D.** (1887). Uganda, Brit. E. Africa. M.D. Aberd.
- MACKRETH, J. F.** Keyingham, Holderness, Hull.
- MCLAUGHLIN, E. H.** (1872). 45, Jeffreys Rd., Clapham Rd.
- MACLEAN, A.** (1869). 10, Mitre Court Chambers, Temple.
- MACLEAN, H. H.** (1878).
- MACNAMARA, J. T.** (1881). 50, Union Road, Rotherhithe.
- MAC RAE, F.** (1888). 25, Half Moon Street, Mayfair. M.B., C.M. Aberd.
- MACTAVISH, J. W.** (1886). Lowdham, Notts.
- MADDEN, T. P.** (1877). Falmouth, Jamaica, M.D., M.Ch.R.U.I.
- MADDICK, E. D.** (1874). 2, Chandos St., Cavendish Sq., F.R.C.S. Edin.
- MAILE, C. E. D.** (1873). Dedham House, Dedham, Essex.
- MAKINS, G. H.** (1871). 47, Charles Street, Berkeley Square. F.R.C.S. Asst. Surg., Joint Lect. on Anat., St. Thomas's Hospital; Surg. to Evelina Hosp., Exam. in Anat. for Conjoint Board Eng. and for Army, Navy and Indian Medical Services. Dean of Med. School. Surg. Registr., Res. Asst. Surg., H.P., H.S.
- MANLEY, W. G. N.** (1850). C.B., V.C. Surg.-Gen. Army (retired). 3, Lansdowne Terrace, Cheltenham.
- MANNERS, W. F.** (1881). Pewsey, Wilts. B.A. Cantab.
- MANSEL-HOWE, S. I.** (1871). Athelby, Hillbury Rd., Tooting. M.D. Brux. H.P., R.A.
- MAPLES, R.** (1870). Tower Hill House, Kingsclere, Newbury, Berks. H.S., R.A.
- MARCH, H. C.** (1857). Portesham, Dorchester. M.D. Lond., J.P. 1858. 1st Year Student, Treasurer's 2nd Prize.  
H.S., R.A.
- MARGENOUT, J. G.** (1884). 59, Hayter Road, Brixton.
- MARLOW, F. W.** (1876). 401, Montgomery St., Syracuse, New York. H.S., A.H.P., Oph. Clin. Asst.
- MARRIAGE, H. J.** (1891). 35, Wickham Road, Beckenham.  
w 1893-4. 2nd Year Student, 2nd Coll. Prize. Clin. Asst. Throat Dept.
- MARRINER, W. H. L.** (1878). Craig Vaen, Poole Rd., West Bournemouth. M.B. Lond.  
Clin. Asst. Ear and Throat Depts.
- MARSACK, A.E.** (1878). Whangarei, Auckland, New Zealand.
- MARSDEN, T.** (1877). Larkstone, Ilfracombe, N. Devon. M.D., C.M. Aber.
- MARSH, J. H.** (1872). Heathfield, Sussex.
- MARSHALL, A.** (1886). 145, London Rd. South, Lowestoft. M.D. Brux.
- MARSHALL, J. G.** (1878). B.A., M.B. Cantab.
- MARSTON, F. E.** (1877). High Street, Welshpool, Montgomeryshire. A.H.P.
- MARTIN, C. J.** (1884). Physiological Lab., Univ. of Sydney, N.S. Wales. D.Sc., M.B. Lond.  
w 1884-5. 1st Year Student, 2nd Entrance Scholarship.
- MARTIN, J. S.** (1896). Claremont, Glossop Rd., Sheffield. M.B., M.S. Edin.
- MARTIN, T. H.** (1886). The Gables, Crawley, Sussex.
- MARTINEAU, A. J.** (1891). 14, Lupus Street.  
s 1892. 1st Year Student, 1st Coll. Prize.  
w 1892-3. 2nd Year Student, 1st Coll. Prize.  
w 1893-4. 3rd Year Student, 2nd Coll. Prize.  
w 1894-5. 4th Year Student, Cheselden Medal (bronze) and Treasurer's Gold Medal.  
H.S., A.H.S.
- MASON, A. E.** (1876). 61, Hillfield Road, West Hampstead.
- MASON, F. W.** (1888). 16, Gippeswyk Road, Ipswich.
- MASON, G. A.** (1888). 45, George St., Portman Square. M.A., M.B., B.C. Cantab.
- MASSEY, H. M.** (1877). Hillgrove, New South Wales.
- MASSEY, H. T.** (1875).



- MATHIAS, W. L. (1882). 114, Darlinghurst Road, Sydney, N.S. Wales.
- MATTEI, C. (1882). Hillend, New South Wales.
- MATTEI, E. (1879). Accra, Gold Coast, West Africa.
- MATTHEWS, C. E. (1885). Med. Superint. Fountain Hosp., Tooting Grove. B.A., M.D., B.Ch. Oxon., D.P.H.  
Clin. Asst. Throat Dept.
- MATURIN, B. A. (1883). Surg.-Capt. Army.
- MAURICE, O. C. (1856). 75, London Street, Reading.
- MAURICE, W. J. (1880). 11, Friar Street, Reading. M.A., M.B., B.Ch. Oxon.
- MAVOR, W. S. (1869). Waltham Cross, Herts. M.D. Durh. H.P.
- MAYBURY, A. C. (1861). 19, Bloomsbury Square. D.Sc. Lond.
- MAYBURY, A. V. (1869). Ashford House, Mile End, Landport. M.D., M.Ch. R.U.I.  
1870. 1st Year Student, 2nd Coll. Prize.  
1871. 2nd Year Student, 1st Coll. Prize.  
w 1872. 3rd Year Student, 1st Coll. Prize;  
Treasurer's Gold Medal.  
H.S.
- MAYBURY, H. M. (1868). 27, Almeida St., Islington. M.D., M.Ch. R.U.I.  
1869. 1st Year Student, 2nd Coll. Prize.  
1871. 3rd Year Student, 3rd Coll. Prize.
- MAYBURY, L. (1874). 9, Hampshire Terrace, Southsea. M.D., M.Ch. R.U.I.
- MAYBURY, W. A. (1866). 9, West Stockwell Street, Colchester, Essex. M.D., M.Ch. R.U.I.  
1867. 1st Year Student, 3rd Coll. Prize.
- MAYNARD, E. C. (1877). Leslie Villa, Richmond, Surrey.
- MAYNARD, J. C. M. (1854). Erith, Kent. M.R.C.P. Edin., J.P.
- MEAD, H. T. H. (1856). Christchurch, Hants. (retired).
- MEADOWS, B. (1854). 141, Victoria St., Westminster.
- MEADOWS, H. (1866). 33, London Rd., Leicester. M.B., C.M. Edin.  
1867. 1st Year Student, The William Tite Scholarship;  
Phys. Soc. 1st Year's Prize.  
1868. 2nd Year, Tite Scholarship;  
Phys. Soc. 2nd Year's Prize.
- MEASURES, J. W. (1868). 62, Burgoyne Rd., Harringay. (Not practising.)
- MEGGITT, H. (1882). York Lodge, Norwood Road.
- MELSMO, W. S. (1890). Queen's Coll., Cambridge. M.A., M.D., B.C. Cantab., F.R.C.S. Demonstr. of Anat. Univ. Camb.
- MENNELL, Z. (1874). 1, Royal Crescent, Notting Hill.
- MERCES, J. (1880). 68, Drayton Park, Highbury.
- MERRY, W. J. C. (1890). 1, Cleveland Square, Hyde Park. M.A., M.D., B.Ch. Oxon.  
H.P., H.S., Clin. Asst. Skin Dept.
- METCALFE, A. W. (1887). 3, Museum Street, York. M.A., M.D., B.C. Cantab.
- METCALFE, G. (1887). 22, Eldon Square, Newcastle-on-Tyne. M.D., B.S. Durh.
- METCALFE, R. (1856). Leyburn, Yorks. M.D. St. And.
- MICHAEL, H. J. (1874). Surg.-Maj. Army.
- MICKLE, W. J. (1867). Med. Superint. Grove Hall Asyl., Bow. M.D. Toronto, F.R.C.P.
- MIDDLETON, R. W. (1881). 17, Hartington Terrace, Beach Road, Southsea. M.B., C.M. Glasg.
- MIFSUD, A. E. (1881). 17, Strada Zaccaria, Valetta, Malta.
- MILLAR, W. H. (1886). St. Helier's, 26, Streatham Hill. M.D. Brux.  
w 1888-9. 3rd Year Student, 2nd Coll. Prize.  
s 1889. 3rd Year Student, 2nd Coll. Prize.  
Clin. Asst. Throat Dept.
- MILLER, F. M. (1864). Northolme, High Road, Upper Clapton.
- MILLER, H. L. (1874). Warrnambool, Victoria, Australia.
- MILLER, J. (1877). 136, South Lambeth Road.
- MILLER, J. T. R. (1883). Castlegate House, 78, Castlegate, Malton, and Leavening, Kirkham Abbey, Yorks.
- MILLS, H. W. (1890). Ruardean, Glouc.
- MILLS, R. J. (1873). 35, Surrey St., Norwich. M.B., C.M. Aberd.
- MILLS-ROBERTS, R. A. (1893).
- MILLS-ROBERTS, R. H. (1882). Hafodty, Llanberis, N. Wales. F.R.C.S. Edin.

- MILTON, A. R. O. (1888). 11, Brunswick Place, Brighton.  
w 1891-2. 4th Year Student, The Mead Medal.  
H.P., H.S., A.H.S.
- MILTON, F. R. S. (1884). Gov. Hosp., Port Said, Egypt.  
H.S., A.H.S.
- MILTON, H. M. N. (1876). Kasr el Aini Hospital, Cairo, Egypt.  
H.S., A.H.S., H.P., A.H.P.
- MILWARD, F. V. (1891). The Holloway, Redditch. B.A., M.B., B.C. Cantab.  
Clin. Asst. Skin and Ear Dept.
- MISKIN, E. (1888). 173, Kennington Road. M.B. Lond.  
s 1890. 2nd Year Student, 1st Coll. Prize.
- MISKIN, G. A. (1858). 173, Kennington Road. M.D. St. And.
- MISKIN, L. J. (1889). 173, Kennington Road. M.B., B.S. Lond.  
w 1889-90. 1st Year Student, 2nd Coll. Prize.  
w 1890-1. 2nd Year Student, Half 1st and 2nd Coll. Prizes.  
s 1891. 2nd Year Student, 1st Coll. Prize.  
H.S., A.H.S.
- MITCHELL, Rev. J. (1865). The Vicarage, Yealand Conyers, Carnforth, Lanc. M.D. St. And., M.R.C.P. Edin.  
1866. 1st Year Student, 2nd Coll. Prize;  
Phys. Society's 1st Year's Prize.  
1867. 2nd Year Student, 2nd Coll. Prize.  
1868. 3rd Year Student, 2nd Coll. Prize.  
R.A.
- MITCHELL, R. N. (1851). 27, Fitzjohn's Avenue. M.D. St. And
- MONEY, F. J. (1848). M.D. Lond.  
1849. Descriptive Anatomy, 2nd Prize;  
Chemistry Prize;  
Materia Medica, 1st Prize;  
Matriculation Scholarship, Prize;  
1st Year Student Scholarship.  
1850. Physiology, Prize;  
Comparative Anatomy, Prize;  
Descriptive Anatomy, Prize;  
Medicine, Prize.  
1851. Midwifery, Prize;  
Medicine, Prize;  
Physical Society's Essay, Prize;  
Surgery, Prize;  
Surgery and Surgical Anatomy, Cheselden Medal;  
General Proficiency, Treasurer's Gold Medal.
- MONTAGUE, A. A. (1891). Rosenau, St. Margarets, Twickenham.
- MONTAGUE, A. J. H. (1881). 35, Potter St., Worksop. M.D. Durh.  
H.P., Clin. Asst. Skin Dept.
- MONTGOMERY, W. A. (1888).
- MOODY, J. M. (1871). Med. Superint. Lond. Co. Asyl., Cane Hill, Purley, Surrey.
- MOORE, D. (1858). Woodthorpe, Sydenham Hill Rd. (not practising).  
M.D. St. And.
- MOORE, H. M. (1888). Surg.-Lt., I.M.S. Bombay.  
Clin. Asst. Ear Dept.
- MOORE, P. L. (1891). Avonside, Tewkesbury.
- MOORES, S. G. (1882). Surg.-Capt. Army.
- MORETON, J. E. (1849). Tarvin, Chester. F.R.C.S.  
1850. 1st Year Student, Scholarship;  
1852. Physiology, Prize;  
Descriptive Anatomy, Prize;  
Physical Society's Essay, Prize;  
Medicine, Prize;  
Surgery, Prize;  
2nd Year Student, Scholarship.  
1853. 3rd Year Student, Scholarship;  
Physiology, Prize;  
Clinical Medicine, Pres. Prize;  
Clinical Medicine, Treas. Prize;  
Clinical Medicine, Mr. N. Smith's Prize;  
Ophthalmic Surgery, Prize;  
Medicine, Prize;  
Surgery and Surgical Anatomy, Cheselden Medal;  
Gen. Proficiency, Treas. Medal.  
1854. Clinical Med., Dr. Root's Prize.  
H.S.
- MORETON, R. (1890). Ivanhoe, Hartford, Cheshire.
- MORETON, T. (1856). Northwich, and Spring Mount, Hartford, Chesh.  
1857. 1st Year Student, Treasurer's 2nd Prize;  
Matriculation Examination, Classics and Mathematics, Prize.  
1858. Clinical Medicine, Prize.  
H.S., R.A.
- MORETON, T. W. E. (1885). Tarvin, Chester. B.A. Cantab.
- MORGAN, C. A. (1883). Claremont, Paignton, S. Devon.
- MORGAN, L. W. (1861). The Hafod, Pont-y-pridd, Glamorg. M.D., C.M. Aberd., J.P.
- MORGAN, L. A. (1878). 118, Bedford Street, Liverpool. M.D. Durh.
- MORGAN, S. (1851). 15, Oakfield Rd., Clifton, Bristol. M.D. St. And.  
1854. Forensic Medicine, 2nd Prize.
- MORGAN, W. (1872). 3, Adelaide St., Swansea.  
R.A.
- MORGAN, W. L. G. (1865).
- MORRIS, C. K. (1873). Gordon Lodge, Charlton Road, Blackheath.  
w 1875. Prosecutor's Prize.
- MORRIS, E. H. G. (1888). 8, Gloucester Terr., Onslow Gdns., S. Kensington. B.A., M.B., B.C. Cantab.  
Anaesthetist St. Thomas's Hospital.  
Tel.: "Emphatic London."

- MORRIS, E. W. (1882). Kembla House, Port Adelaide, S. Australia.
- MORRIS, J. E. (1867). Windhill, Bishop's Stortford, Herts. M.D. Durh.
- MORRIS, S. G. Nantgaredig, Carmarthen. M.D., C.M. Edin.
- MORTON, J. (1860). Eastgate House, Guildford. M.B. Lond. H.S., R.A.
- MOULLIN, J. A. M. (1871). 69, Wimpole St., Cavendish Square. M.A., M.B. Oxon.; M.R.C.P. H.P.
- MOXON, C. C. (1885). Market Place, Pontefract.
- MUNRO, A. W. (1882). Liverpool Street, Sydney, N.S. Wales. M.D., C.M. Edin. F.R.C.S.
- MUSSON, A. W. (1887). 15, King St., Clitheroe, Lanc. B.A., M.B., B.C. Cantab.
- MUSSON, W. E. (1849). Clitheroe, Lanc. 1850. Matriculation Scholarship, Prize.
- MYERS, W. (1894). B.A., M.B., B.C. Cantab.
- NAIRN, R. (1881). Hastings, Napier, New Zealand. F.R.C.S. Ophth. Asst., H.P.
- NASH, E. H. T. (1890). 36, The Avenue, Bedford Park. 1896. Solly Medal and Prize. H.P., Clin. Asst. Ear Dept.
- NAUTH, B. (1890). Surg.-Capt. I.M.S. Madras.
- NEATE, C. P. W. (1855). Stilton, 15, London Road, Forest Hill. F.R.C.P., F.R.C.S. Edin.
- NETTLESHIP, E. 5, Wimpole Street, Cavendish Square. F.R.C.S. Cons. Oph. Surg. St. Thomas's Hospital; Surg. Roy. Lond. Ophth. Hosp. Ophth. Surg., Dean of Med. Sch.
- NEWBOULD, N. J. (1878). Abbots Bromley, Staff.
- NEWBY, C. H. (1866). 20, Landport Terr., Southsea, Hants. F.R.C.S. 1870. Prosector's Prize. Surg. Regist., H.S., H.P., R.A., Asst. Demonstr. of Anat.
- NEWCOMBE, C. F. (1882). Victoria, British Columbia. M.D., C.M. Aber.
- NEWINGTON, A. S. L. (1872). Woodlands, Ticehurst, Sussex. M.B. Cantab. H.P.
- NEWINGTON, T. (1874). Ridgeway, Ticehurst, Sussex. B.A. Cantab.
- NEWSHOLME, A. (1875). Town Hall, and 11, Gloucester Place, Brighton. M.D. Lond.; M.R.C.P. w 1875-6. 1st Year Student, 1st Coll. Prize. w 1876-7. 2nd Year Student, 1st Coll. Scholarship. s 1877. Ditto 1st Coll. Prize. w 1877-8. 3rd Year Student, The "College Scholarship," 1st Coll. Prize. H.P., A.H.P., A.H.S., R.A.
- NEWTN, A. H. (1864). Hayward's Heath, Sussex. M.D. Aberd. Mem. Gen. Counc. Univ. Aberd.
- NICHOL, F. E. (1882). 11, Ethelbert Terr., Margate. M.A., M.B., B.C. Cantab. H.S., A.H.S., Clin. Asst. Skin Dept.
- NICHOLSON, F. (1872). 29, Albion St., Hull. M.D. Lond. Phys. Hull Roy. Infirm. w 1873. 1st Year Student, 1st Coll. Prize. s 1873. Ditto 1st Coll. Prize. w 1874. 2nd Year Student, 1st Coll. Prize. s 1874. Ditto 1st Coll. Prize. w 1875. 3rd Year Student, 1st Coll. Prize; Cheselden Medal; Mead Medal; Treasurer's Gold Medal. R.A., H.P., H.S.
- NICHOLSON, T. G. (1889). M.B., B.Sc. Lond. w 1889-90. 1st Year Student, 1st Entrance Science Scholarship. H.P., Clin. Asst. Skin Dept.
- NIVEN, J. (1878). Public Health Office, Town Hall, Manchester. M.A. Aberd.; M.A., M.B., B.C. Cantab.
- NIX, H. W. (1888). Gov. Med. Off. Marble Bar, Pilbarra Gold Field, W. Australia. B.A., M.B., B.C. Cantab. H.S., A.H.S.
- NIX, R. E. (1891). 14, Warkworth Street, Cambridge. B.A., M.B., B.C. Cantab. H.P.
- NORRIS, E. S. (1875). 117, High St., Eton, Bucks. M.A., M.B. Cantab. Med. Regist. and Asst. Demonstr. of Morb. Anat.
- NORTHCOTE, P. (1887). Amwell, Beckenham. M.B. London. H.P.
- NORTON, J. J. (1887). Bagnalstown, Co. Carlow.
- NOWELL, A. H. (1856). Clarendon House, Mortlake.
- OBORN, H. W. (1885). 1, Hyde Vale Villas, Hyde Vale, Greenwich.
- ODDIE, S. I. (1891). New Malden, Surrey. M.B., C.M. Edin.
- ODLING, A. E. (1876). Alford, Linc.

- OKELL, J. B. (1880). 2, Magdala Rd., Nottingham.
- OLDING, A. E. (1881).
- OLIVEY, W. J. (1881). Daydawn, Murchison, West Australia.
- ORANGE, W., C.B. (1853). 12, Lexham Grdns., Kensington. M.D. Heidelb., F.R.C.P. Lond.
- ORD, G. R. (1855). Streatham Hill.
- ORD, G. W. (1881). Mildenhall, Suffolk.
- ORD, R. W. (1888). 4, Cambridge Terrace, Dover. M.A., M.B., B.C. Cantab. A.H.S.
- ORD, W. M. (1852). 37, Upper Brook Street. M.D. Lond., F.R.C.P. Cons. Physician to St. Thos. Hosp. 1853. Matriculation Exam. Scholarship; 1st Year Student, Scholarship; Descriptive Anatomy, Prize; Chemistry, Prize.
1854. 2nd Year Student, Scholarship; Medicine, Prize; Materia Medica, Prize; Physiology, Prize.
1855. 3rd Year Student, Scholarship; Surgery and Surgical Anatomy, Cheselden Medal; Forensic Medicine, Prize; Pathology, Prize; Practical Chemistry, Prize; Physiology, Prize; General Proficiency, Treasurer's Medal.
1856. Registrar, Prize. Physician, Joint Lecturer on Medicine, Lecturer on Comparative Anatomy, Physiology, and Practical Physiology, Demonstrator of Anat., Surg. Registr. and H.S.
- ORD, W.W. (1883). The Hall, Salisbury. M.A., M.D., B.Ch. Oxon., M.R.C.P. s 1884. 1st Year Student, 2nd Coll. Prize. w 1884-5. 2nd Year Student, Half 2nd Coll. Prize.
- w 1886-7. 4th Year Student, Mead Medal. H.P., H.S., A.H.S.
- ORFORD, J. (1877). Starfield House, Pontefract, Yorks. H.S., H.P., R.A.
- ORISADIPE OBASA (1885) of Ikija (Prince), Lagos, W. Africa.
- ORONHYATEKHA, A. (1894). 24, Charing Cross. M.D. Toronto.
- OSBORN, S. (1867). 10, Maddox Street, Regent Street. F.R.C.S., J.P. Surgeon to the Hospital for Women, Soho Square.
1870. Physical Society, 2nd Year's Prize. Surgical Registrar, H.S., H.P., R.A.
- OSBORNE, F. (1882).
- OSBURN, H. B. (1884). Bagshot, Surrey. D.P.H. R.A., S.O.C.
- OWEN, C. W. (1869). C.I.E., C.M.G. Surg.-Lt.-Col. Bengal Army.
- PALIN, E. W. (1891). 18, Gloucester Rd., Ross. M.A., M.B., B.Ch. Oxon. H.P., Clin. Asst. Ear Dept.
- PALIN, H. V. Wrexham. M.B., C.M. Edin., J.P. Mayor of Wrexham, 1889-90-1.
- PALMER, A. M. (1867). Whittington, Chesterfield.
- PALMER, H. G. (1879). 83, Milkwood Road, Herne Hill.
- PALMER, H. J. (1874). Long Eaton, Nottingham.
- PAPILLON, J. W. (1876). Brent Knoll, Bridgwater, Somers.
- PAPILLON, T. A. (1876). 9, Pevensey Rd., St. Leonard's-on-Sea. F.R.C.S. Edin.
- PANIOTY, J. E. (1878). 1, Larkin's Lane, Calcutta, India.
- PARK, J. R. S. (1879). 183, King Street, Dukinfield, Cheshire.
- PARKER, G. R. W. (1885). 19, Derby Lane, Stoneycroft, Liverpool. M.A. Cantab.
- PARKER, G. W. (1860). 17, Tisbury Rd., West Brighton. M.R.C.P. Lond.
- PARKER, R. W. (1860). 13, Welbeck Street, Cavendish Square.
- PARKER, W. T. (1873). 68, Lillie Road, Fulham.
- PARROTT, J. (1869). Stanhoe House, Grove Vale, East Dulwich.
- PARSEY, E. W. (1886). Glenavon, King's Norton, Worc. M.A., M.B., B.C. Cantab.
- PARSON, F. J. (1865). New Somerset Hosp., Cape Town, South Africa.
- PARSON, H. (1869). Bondfield, Bursledon, Hants. (retired).
- PARSONS, C. O. (1882). 202, Castle Road, Roath, Cardiff.
- PARSONS, F. G. (1881). 17, Michel-dever Road, Lee. F.R.C.S., Lect. on Comp. Anat. and Elem. Biol., Demonstrator of Anat. at St. Thomas's Hospital. Exam. in Anat. and Supt. of Dissections, Apoth. Hall. w 1882-3. 2nd Year, Prosector's Prize. w 1886-7. 6th Year, Grainger Testimonial Prize.
- PARSONS, W. D. (1836). 32, Huskisson Street, Liverpool.
- PARTRIDGE, W. T. (1877). 97, Albany Road, Old Kent Road.
- PATCH, H. H. L. (1885). The Fernery, Chudleigh, S. Devon.



- PATERSON, W. H. J. (1889). St. Thomas's Hospital. w 1890-1. 1st Year Student, 2nd Coll. Prize. H.P., A.H.S., Clin. Asst. Ear Dept.
- PATTIN, H. C. (1883). Municipal Offices, Norwich. M.A., M.B., B.C., D.P.H. Cantab. Med. Off. Health, Norwich.
- PAUL, E. W. (1871). Hope House, West Cowes, I. W.
- PAULING, W. T. (1886). New Somerset Hosp., Cape Town.
- PAYNE, J. F. 78, Wimpole Street, Cavendish Square. B.A., M.D. Oxon.; B.Sc., F.R.C.P. Lond.; Phys. and Jt. Lect. on Med. (late Lect. on Path. and Morb. Anat.) St. Thos. Hosp. Radcliffe Travelling Fellow, Oxford.
- PEARCE, F. H. (1893). Northern Hosp. Liverpool. B.A. Cantab.
- PEARCE, G. H. (1886).
- PEARSE, A. W. (1882). The Rookery, Blofield, Norwich.
- PEARSON, H. L. (1883). Bay House, Holt Hill, Tranmere, Birkenhead, and Devon House, Bedford Rd., Rock Ferry, Ches.
- PEATLING, A. V. (1889). The Old Market, Wisbech, Cambs. B.A., M.B., B.C. Cantab.
- PEDLEY, R. D. (1877). 17, Railway Approach, London Bridge. F.R.C.S. Edin.; L.D.S. Demonstr. of Dent. Surg.
- PELL, W. (1884).
- PENHALL, J. T. (1852). Broadwas-on-Teme, Worc. (retired). M.D. St. And., F.R.C.S.
- PENTREATH, L. N. (1890). 5, Albert Road, Bognor, Sussex. M.A. Oxon.
- PERKINS, A. L. (1875). Sketty, Swansea.
- PERKINS, J. J. (1888). 16, Cowley St., M.A., M.B., B.C. Cantab.; M.R.C.P. w 1888-9. 3rd Year Student, 1st Coll. Prize. H.P.
- PERKINS, J. S. (1825). 9, Palace Gate, Exeter. F.R.C.S.
- PERN, A. (1864). Botley, Southampton. F.R.C.S., D.P.H.
- PERN, E. C. (1888). Droxford, Hants.
- PERRY, E. L. (1890). Surg.-Lt. I.M.S., Bengal. w 1891-2. 2nd Year Student, 2nd Coll. Prize. w 1892-3. 3rd Year Student, 2nd Coll. Prize.
- PERSHOUSE, F. (1886). Asst. Med. Off. S.-West. Fev. Hosp., Stockwell. H.P., Clin. Asst. Skin Dept.
- PETMAN, A. P. (1853).
- PETTIGREW, A. J. W. (1871). Camperdown, Victoria.
- PHELPS, A. M. (1873). 37, Compton Terrace, Highbury. M.A., M.D. Cantab.
- PHELPS, W. H. G. (1852). Weston-super-Mare. M.D. Aberd.
- PHILLIPS, A.O.H. (1871). Warwick, Queensland.
- PHILLIPS, A. S. (1883). 17, Kimbolton Rd., Bedford.
- PHILLIPS, E. J. M. (1874). 33, Rodney Street, Liverpool. L.D.S., Hon. Dent. Surg. Liverp. Roy. Infirm., Lect. on Dent. Surg. Univ. Coll. Liverp.
- PHILLIPS, E. V. (1881). Kibworth, Leicester. D.P.H.
- PHILLIPS, G. C. J. (1890). General Hospital, Cheltenham. M.A., M.D., B.C. Cantab.
- PHILLIPS, G. G. (1858). Tickhill, Rotherham, Yorks. 1860. 3rd Year Student, 3rd Coll. Prize. H.S.
- PHILLIPS, J. D. (1856). Hoxne, Scole, Suffolk.
- PHILLIPS, J. R. P. (1885). 26, High Street, Swindon.
- PHILLIPS, P. C. (1886). Maybush House, Felixstowe. Clin. Asst. Skin Dept.
- PHILLIPS, S. C. (1882). 178, Commercial Road, Peckham.
- PICKFORD, J. K. (1871). High Cliff Ter., Cleethorpes, Gt. Grimsby, Linc. w 1872. 1st Year Student, 3rd Coll. Prize.
- PIETERSEN, J. F. G. (1879). Ashwood House, Kingswinford, Staff. w 1883-4. Solly Medal and Prize. Clin. Asst. Throat Dept.
- PIGGOTT, F. C. H. (1882). 13, Orchard Gdns., Teignmouth, S. Devon. B.A., M.D., B.C. Cantab.
- PIERCE, R. W. C. (1893). B.Sc. Lond. w 1893-4. 1st Year Student, 1st Entrance Sci. Scholarship, 1st Coll. Prize. s 1894. 1st Year Student, 2nd Coll. Prize. w 1894-5. 2nd Year Student, 1st Coll. Prize. w 1895-6. 3rd Year Student, 2nd Coll. Prize. s 1896. 3rd Year Student, 2nd Coll. Prize.
- PIKE, J. B. (1870). 15, High Street, Loughborough.
- PINTO, J. O. (1886). Surg.-Capt. I.M.S. Madras.



- PITTS, B. (1873). 109, Harley St., Cavendish Square. M.A., M.B., M.C. Cantab., F.R.C.S., Surgeon and Lect. on Surg. St. Thos. Hosp.; Surg. Hosp. for Children, Gt. Ormond St. Exam. in Surgery, Univ. Camb. Res. Asst. Surg., Demonstr. of Anat., H.S., R.A.
- PLANCK, C. (1888). County Asylum, Haywards Heath. M.A. Cantab. w 1888-9. 1st Year Student, 2nd Coll. Prize. w 1889-90. 2nd Year Student, The Peacock Scholarship. s 1890. 2nd Year Student, 2nd Coll. Prize. w 1890-1. 3rd Year Student, 2nd tenure of Peacock Scholarship, with 3rd Coll. Prize. H.S., A.H.S., Clin. Asst. Ear Dept., Asst. Demonstr. of Pract. Surg.
- PLANT, C. (1882). Dalton-in-Furness, Lanc.
- PLOWMAN, S. (1879). Victoria. F.R.C.S.
- PLOWMAN, T. A. B. (1881). Eagle House, Clapham Common.
- POCOCK, A. G. C. (1877). Manor View, High Road, Streatham.
- POCOCK, W. (1870). Chicago, U.S.A.
- PODMORE, R. (1870). 7, Linden Gardens, Chiswick.
- POLLARD, F. (1864). 11, St. James's Road, Upper Tooting. M.D. Lond. 1865. 1st Year Student, 2nd Coll. Prize. 1866. 2nd Year Student, 2nd Coll. Prize; Physical Society's 2nd Year's Prize. 1868. 3rd Year Student, 1st Coll. Prize; Physical Society's 3rd Year's Prize; Cheselden Medal. Med. Regist., H.S., R.A.
- POMEROY, W. (1889). Queen Camel, Bath.
- POOLE, C. N. F. (1886). 16, Cicada Road, St. John's Hill, Wandsworth.
- POPE, E. (1833). Tring, Herts. (retired).
- PORTER, G. (1886). Frascati, St. James's Rd., Surbiton. M.D., C.M. Edin.
- POTTER, H. P. (1871). Med. Superint. Kensington Infirmary. M.D. Durh., F.R.C.S., D.P.H. s 1872. 3rd Coll. Prize. w 1873. 2nd Year Student, 2nd Coll. Prize; Prosector's Prize. w 1874. 3rd Year Student, 1st Coll. Prize; Cheselden Medal. 1875. Grainger Testimonial Prize. Surgical Registrar, H.S., H.P., R.A.
- POTTER, J. H. (1881). Cullompton, Devon.
- POULTON, B. (1879). Adelaide, S. Australia.
- POWELL, J. J. (1887). Highworth, Wilts. M.A., M.B., B.C. Cantab.
- POWELL, J. J. (1874). Norwood Lodge, Weybridge, and Byfleet, Surrey.
- POWER, C. J. (1879). Hazelwood, Nailsworth, Glouc. M.A. Cantab., M.D. Dub.
- POYNDER, G. F. (1871). Surg.-Maj. Army.
- PRAIN, J. L. (1888). St. Thomas's Hospital. H.S., A.H.S., Clin. Asst. Throat Dept.
- PRALL, C. B. (1887). Surg.-Capt. Bengal Army.
- PRANGLEY, H. J. (1875). Tudor House, 197, Anerley Road.
- PRICE, A. (1869). 2, Handsworth New Road, Birmingham.
- PRICE, A. E. (1884). 9, Clifton Cresc., Folkestone. M.B. Lond. Clin. Asst. Ear and Skin Depts.
- PRICE, W. T. (1876).
- PRIESTLEY, C. E. (1870).
- PRING, H. R. (1888). 83, Essex Road, Islington.
- PRINGLE, A. Y. (1884). 36, Cambridge Gdns. Notting Hill. Clin. Asst. Throat Dept.
- PRIOR, J. (1890). House Surg. Dewsbury and Distr. Gen. Infirmary.
- PROCTOR, S. F. (1874). Trinidad, W. Indies.
- PRONGER, C. E. (1872). East Parade, Harrogate, Yorks. F.R.C.S.
- PUGH, J. H. (1871). Chestnut Lawn, Stechford, nr. Birmingham. B.A. Cantab.
- PURKISS, A. (1875). Rosedale, Wols-ton, nr. Coventry. M.D., C.M. Aberd.
- PURVIS, G. C. (1882). 3, Buccleuch Place, Edinburgh. M.D., C.M. Edin., B.Sc.
- PURVIS, J. P. (1860). 38, Royal Hill, Greenwich.
- PURVIS, P. (1833). 5, Lansdowne Place, Blackheath. M.D. Lond.
- PURVIS, W. P. (1887). House Surg., Royal South Hants. Infirmary, Southampton. M.D., M.S., B.Sc. Lond.; F.R.C.S. H.S., H.P., A.H.S., Clin. Asst. Throat Dept.
- QUAIT, A. W. (1887). St. Brannock's, Mundesley, Norfolk.
- QUILLER, C. T. (1882). St. Paul's Close, Rectory Grove, Clapham.

- RABY, J.** (1862). Purley, Surrey.  
R.A.
- RADCLIFFE, H. H.** (1842). Ballarat,  
Victoria, Australia.
- RANSON, W.** (1888). Co. Infirmary,  
Downpatrick, co. Down.
- RAY, W. J. O.** (1889). Marl Hill,  
Carisbrooke, I.W.  
Clin. Asst. Throat Dept.
- RAYNER, H.** (1861). 2, Harley St.,  
Cavendish Square, and Upper  
Terrace House, Hampstead. M.D.,  
C.M. Aberd.; M.R.C.P. Edin.; Lect.  
on Psychology at St. Thomas's  
Hospital.  
1862. 1st Year Student, 1st Coll. Prize.  
1863. 2nd Year Student, 1st Coll. Prize.  
Lecturer on Psychology at Middlesex  
Hospital, and Medical Superintendent  
Hanwell Asylum.
- READ, A. E.** (1881).
- REDDY, H. L.** (1876). 999, Dorchester  
St., Montreal, Canada. M.D., C.M.
- REDPATH, W.** (1888). Geelong Mining  
Co., Gwanda, Rhodesia. M.B. Lond.  
H.S., A.H.S., Asst. Teacher Pract. Surg.
- REED, W. H.** (1861). Allersleigh,  
Westbury, Wilts.
- REID, R. G.** (1890). 176, Lambeth  
Road. M.B., C.M. Glasg.
- REID, R. W.** 37, Albyn Place,  
Aberdeen. M.D., C.M. Aberd.;  
F.R.C.S., Prof. of Anat. Univ.  
Aberd.  
Joint Lect. on and Sen. Demonstr. of Anat.,  
Joint Demonstr. of Morb. Anat.
- REILLY, C. C.** (1880). Surg.-Maj.  
Army.
- RELTON, B.** (1879). 50, Church St.,  
Rugby.  
1880. 2nd Entrance Science Scholarship.  
H.S., A.H.S., Asst. Demonstr. of Pract.  
Surg.
- RENDLE, G.** 113, Sunderland Road,  
Forest Hill. Sec. Med. Sch. (1883).
- RENNY, E. G.** (1886). Priory House,  
Wellesley Road, Colchester.
- REVELY, J. S.** (1885). 25, Greek St.,  
Stockport. M.D. Durh.
- REW, J.** (1857). 31, Western Road,  
Bexhill-on-Sea, Sussex.
- RICHARDS, L. W.** (1891). M.B., B.S.  
Durh.  
H.P. Clin. Asst. Throat Dept.
- RICHARDSON, C. B.** (1875). 2, Tisbury  
Road, West Brighton. M.D., C.M.  
Aberd.  
A.H.P., A.H.S.
- RICHARDSON, J. C. R.** (1887). Sax-  
mundham, Suffolk. M.A., M.B.,  
B.C. Cantab.
- RICHARDSON, S. W. F.** (1889). Royal  
Free Hospital. M.B., B.S., B.Sc.  
Lond.; F.R.C.S.  
w 1889-90. 1st Year Student, The William  
Tite Scholarship.  
s 1890. 1st Year Student, 2nd Coll. Prize.  
w 1890-1. 2nd Year Student, The Musgrove  
Scholarship.  
w 1891-2. 3rd Year Student, 2nd Tenure of  
Musgrove Scholarship.  
s 1892. 3rd Year Student, 1st Coll. Prize.  
w 1892-3. 4th Year Student, The Cheselden  
Medal;  
The Treasurer's Gold Medal.  
H.S., A.H.S., Obst. H.P. Demonstrator  
of Physiology.
- RIDGE, J. J.** (1863). Carlton House,  
Enfield, Middlesex. M.D., M.D.  
(State Med.), B.S., B.A., B.Sc.  
Lond.  
1864. 1st Year Student, The William Tite  
Scholarship.  
1865. 2nd Year of Tite Scholarship;  
Physical Society's 2nd Year's Prize;  
Prosecutor's Prize.  
1866. The Grainger Testimonial Prize.  
1868. 3rd Year Tite Scholarship;  
Treasurer's Gold Medal.  
H.S.
- RIDSDALE, A. E.** (1888). Rottingdean,  
Sussex.
- RIGBY, C. S. A.** (1878). 15, Winckley  
Sq., Preston, Lanc. M.B., C.M.  
Aberd.
- RIGBY, P. A.** (1873). Bhagalpur,  
Bengal, India.
- RITCHIE, E. D.** (1883). M.A., M.B.,  
B.C. Cantab.  
H.S., A.H.S., H.P., A.H.P.
- ROALFE-COX, W. J.** (1881). The  
Laurels, Mortimer, Reading, Berks.
- ROBATHAN, G. B.** (1866). The Grove,  
Risca, Newport, Mon.
- ROBERTS, E. A.** (1884). 19, Cliveden  
Place, Eaton Square. M.D. Lond.
- ROBERTS, O.** (1874). 32, Craven Park  
Road, Harlesden.
- ROBERTSON, C.** (1883). Thistle Villa,  
Sea Point, Cape Town, S. Africa.
- ROBINSON, G. W.** (1873). Surg.-Maj.  
Army.
- ROBINSON, H. B.** (1879). 1, Upper  
Wimpole Street. M.D., M.S. Lond.,  
F.R.C.S. Assistant Surgeon to and  
Dem. of Anatomy at St. Thomas's  
Hospital. Assistant Surgeon to the  
East London Hospital for Children,  
Shadwell.  
s 1881. 2nd Year Student, 1st Coll. Prize.  
Resident Assistant Surgeon, H.P., H.S.,  
A.H.S.
- ROBINSON, J. C. R.** (1889).
- ROBINSON, M. A.** (1869).

- ROBINSON, S. C. B. (1874). Surg.-Maj. Army.
- ROBINSON, S. R. (1836). 68, Fenwick St., Geelong, Victoria, Australia.
- ROBINSON, W. H. (1882). 14, Upper Queen's Terrace, Fleetwood, Lanc.
- ROBSON, C. (1882).
- ROBSON, R. B. (1887). 20, Bondgate Without, Alnwick, Northld. M.B. Durh.
- ROBSON, W. W. C. (1878). Walker-ingham, Gainsboro', Linc.
- ROCK, C. H. (1887). Surg. R.N. 65, Granville Park, Lewisham.
- ROCKLIFFE, W. C. (1871). 17, Charlotte Street, Hull. M.A., M.B. Cantab.; M.D. Dub.
- ROE, A. D. (1880). 47, West Hill, Wandsworth. B.A., M.B. Cantab. w 1880-1. 3rd Year Student, 2nd Coll. Prize.
- ROE, E. A. H. (1889). Surg.-Lt.-Col. Army (retired).
- ROLL, G. W. (1884). 126, London Rd., Leicester. B.A., M.B., B.C. Cantab. Ophth. H.S.
- ROMER, H. (1884). 68, Killieser Avenue, Streatham Hill. M.A., M.B., B.Ch. Oxon.
- RONALD, A. E. (1886). 3, Henson St., Sydney, N.S. Wales. B.A., M.B., B.C. Cantab.
- ROPER, H. (1890). B.A., M.B., B.C. Cantab.
- RORIE, J. (1846). Dep. - Insp. - Gen. R.N. (retired).
- ROSSER, W. (1865). Glenalmond, Wellesley Road, Croydon, Surrey. M.D. Aberd. H.S.
- ROSSITER, G. F. (1870). Cairo Lodge, Weston-super-Mare. M.B. Lond. 1871. 1st Year Student, 1st Coll. Prize. w 1872. 2nd Year Student, 2nd Coll. Prize. s 1872. 1st Coll. Prize. w 1873. 3rd Year Student, 3rd Coll. Prize; Cheselden Medal; Treasurer's Gold Medal. H.P., H.S., R.A.
- ROSTANT, A. A. (1887). Port of Spain, Trinidad.
- ROTH, W. E. (1884). Normanton, North Queensland.
- ROTHERHAM, A. (1892). Asst. Med. Off. Lond. Co. Asyl., Cane Hill, Purley, Surrey. M.A., M.B., B.C. Cantab.
- ROUILLARD, J. A. A. (1891). Clin. Asst. Throat Dept.
- ROUILLARD, L. A. J. (1886). Durban, Natal. M.B. Camb.; F.R.C.S. H.S., A.H.S.
- ROUND, J. C. (1884). Purbrook, 19, Crescent Wood Road, Sydenham Hill.
- ROUSE, R. E. (1878). 42, Hove Park Villas, West Brighton (summer); and Villa Copello, Boulevard Peirra, Monte Carlo (winter). M.D. Lond. s 1880. 2nd Year Student, 3rd Coll. Prize. R.A.
- ROWE, W. J. V. (1875). Johannesburg, Transvaal.
- RUDALL, J. F. (1890). 121, Collins Street East, Melbourne. M.B., B.S. Melb. Ophth. H.S.
- RUDALL, J. T. (1851). 121, Collins Street East, Melbourne, Victoria, Australia. F.R.C.S.
- RUGG, J. F. (1873). 25, High St., Hastings.
- RUSSELL, A. E. (1889). Melton House, 43, Manor Park, Lee. M.B., B.S. Lond.; Med. Regis. and Demonstrator of Practical Medicine. w 1889-90. 1st Year Student, 2nd Entrance Science Scholarship; 1st Coll. Prize. s 1890. 1st Year Student, 1st Coll. Prize. w 1890-1. 2nd Year Student, Half 1st and 2nd Coll. Prizes. w 1891-2. 3rd Year Student, 1st Coll. Prize. H.P., H.S., A.H.S., Clin. Asst. Skin Dept. Demonstrator of Physiology.
- RUSSELL, J. (1890). Brunswick St., Batley, Yorks. M.A. Aberd., M.D., C.M. Edin.
- RUSSELL, J. S. R. (1886). 4, Queen Anne St., Cavendish Square. M.D. C.M. Edin.; M.R.C.P. Lond.
- RUTHERFOORD, H. T. (1886). Salisbury House, Taunton. M.A., M.D. Cantab.
- RYGATE, R. (1877). Wardington, Banbury, Oxon.
- SALISBURY, C. R. (1887). Stanningley, Leeds.
- SAMS, J. S. (1854).
- SANDERSON, A. R. P. (1891). Eureka City, Barberton, Transvaal.
- SANDWITH, F. M. (1872). Cairo, Egypt, and Savile Club, London. M.D. Durh.; M.R.C.P. Lond.; Phys. and Teacher of Clin. Med. Kasr el Aini Hosp., Cairo; Exam. in Med. and Path. at Med. Sch. H.P., R.A.
- SANEYOSHI, Y. (1879). Tokio, Japan. F.R.C.S. w 1881-2. 3rd Year Student, 1st Coll. Prize. H.P., A.H.P., A.H.S.
- SANGUINETTI, H. H. (1895). B.A. Oxon.

- SANKEY, E. H. O.** (1891). Boreatton Park, Baschurch, Salop. M.A., M.B., B.C. Cantab.
- SANSOM, H. A.** (1882). The Glen, 127, West End Lane, West Hampstead. M.D. Lond.  
A.H.P., Clin. Asst. Throat and Skin Depts.
- SAPARA, O.** (1887). Lagos, West Africa.
- SARKIES, S. C.** (1877). Surg.-Maj. Madras Army.
- SAUNDERS, C. E.** (1861). Med. Superint. Sussex Co. Asyl., Hayward's Heath. M.D., C.M. Aberd.; M.R.C.P., D.P.H.  
Surg. Regist., R.A.
- SAUNDERS, E. A.** (1889). 5, Alderbrook Rd., Nightingale Lane, Balham. M.A., M.B., B.Ch. Oxon.  
w 1892-3. 4th Year Student, The Mead Medal.  
H.P. Obst. H.P. Ophth. H.S.
- SAUNDERS, Sir Edwin.** (1836). Fairlawn, Wimbledon Common (retired). F.R.C.S., Surg.-Dent. to H.M. the Queen and T.R.H. the Prince and Princess of Wales, also to his late R.H. Prince Consort.  
Lect. on Anat. and Dis. of the Teeth,
- SAUNDERS, F. E.** (1886).
- SAUNDERS, H.** (1882). The Priory, Deddington, Oxon. B.A. Cantab.
- SAUNDERS, H. W.** (1866). 82, Pembroke Road, Clifton, Bristol, M.B. Lond., F.R.C.S.  
1867. 1st Year Student, 2nd Coll. Prize.  
1868. Prosecutor's Prize.  
1869. 3rd Year Student, 1st. Coll. Prize; Treasurer's Gold Medal;  
Physical Society's 3rd Year's Prize.
- SAUNDERS, W. S.** (1843). 13, Queen Street, Cheapside, and 58, Onslow Gdns., South Kensington. M.D. Castleton U.S.  
1845. Medicine, Prize;  
Midwifery, Prize;  
Clinical Medicine, Prize.
- SAVILL, T. D.** (1875). 60, Upper Berkeley St., Portman Sq. M.D. Lond., D.P.H. Cantab.  
w 1875-6. 2nd Entrance Science Scholarship;  
1st Year Student, The William Tite Scholarship.  
s 1876. 3rd Coll. Prize.  
s 1877. 2nd Year Student, 2nd Coll. Prize.  
H.P., A.H.P., R.A.
- SAYRES, A. W. F.** (1885). Woodford, Essex. M.D. Brux.  
Clin. Asst. Ear. Dept.
- SAYERS, M. J. H.** (1889). Asst. H.S. Worcester General Infy.
- SCATCHARD, J. P.** (1892).  
w 1892-3. 1st Year Student, 1st Coll. Prize.  
s 1893. 1st Year Student, 2nd Coll. Prize.  
w 1893-4. 2nd Year Student, 1st Coll. Prize.  
w 1895-6. 4th Year Student, The Mead Medal, Treasurer's Gold Medal.  
H.P. Junr. Obst. H.P.
- SCHILLING, G.** (1885). Haverthwaite, Ulverston.
- SCOTT, E.** (1870). Perth, W. Australia. M.D. Durh. D.P.H.
- SCOTT, J. R.** (1885). Market Overton, Oakham, Rutland.
- SCOTT, J. W.** (1875). 19, Bilston St., Wolverhampton.
- SCUDAMORE, L.** (1886). 23, Granville Park, Blackheath.  
Clin. Asst. Skin. Dept.
- SCUTT, T. H.** (1879). Colne Lodge, Staines, Middlesex.  
w 1882-3. 3rd Year Student, 1st Coll. Prize.  
A.H.P.
- SEAR, J. T.** (1888). 79, Tyrwhitt Road, Lewisham.
- SEATON, E.** (1865). The Limes, 56, North Side, Clapham Common. M.D., F.R.C.P. Lect. on Pub. Health St. Thos. Hosp.; Exam. in Pub. Health and State Med. R.C.S. Eng. and Univ. Lond.
- SECOOMBE, P. J. A.** (1890). 45, Madeley Rd., Ealing. M.A., M.B., B.C. Cantab.  
H.P., Clin. Asst. Throat and Electr. Depts.
- SEDDON, H. B.** (1883). 40, Chepstow Rd., Newport, Mon.  
A.H.P., Clin. Asst. Throat and Ear Dept.
- SEDGWICK, H. R.** (1892). Onslow Villa, Richmond Road, Kingston-on-Thames. M.A., M.B., B.C. Cantab.  
Clin. Asst. Skin Dept.
- SEDGWICK, J.** (1853). Boroughbridge, Yorks. M.D. St. And. J.P.
- SEDGWICK, L. W.** (1847). 48, Gloucester Terrace, Hyde Park. M.D. St. And.  
1848. Descriptive and Surgical Anatomy, Prize;  
Physiology and Anatomy, Prize;  
Midwifery, Prize;  
Surgery, Prize.  
1849. Physiology, 1st Prize;  
Midwifery, 1st Prize;  
Surgery, Prize;  
Medicine, 1st Prize;  
General Proficiency, Treasurer's Medal.
- SELIGMANN, C. G.** (1892).  
w 1892-3. 1st Year Student, 2nd Entrance Science Scholarship; Half and Coll. Prize.  
w 1896-7. The Bristowe Medal.  
H.P. Clin. Asst. Electrical Dept.



- SEMON, Sir F. 39, Wimpole Street, Cavendish Square. M.D. Berlin; F.R.C.P. Lond. Late Phys. for Dis. of Throat St. Thos. Hosp.
- SENIOR, E. W. (1886). Hamilton Villa, Herne Bay.
- SEON, G. E. (1877). Dellwood, Liebenwood Road, Reading.
- SERGEANT, E. (1867). County Offices, Preston, Lanc. L.S.Sc. Durh. 1870. 3rd Year Student, 3rd Coll. Prize; Cheselden Medal.  
H.S., R.A.
- SERS, C. H. (1868). 130, Queen's Rd., Peckham.
- SHACKEL, G. A. (1880). 8, Corve St., Ludlow, Salop.
- SHARKEY, S. J. (1873). 22, Harley Street, Cavendish Square. M.A., M.D. Oxon.; F.R.C.P.; Gulst. Lect. 1886. Phys., Jt. Lect. on Med. St. Thos. Hosp.; Late Exam. in Path. Univ. Oxf. Exam. in Medl. Anat. and Principles and Pract. of Med. R.C.P. Lond. Demonstrator of Morbid Anatomy, and Res. Asst. Phys.; Radcliffe Travelling Fellow, Univ. Oxf.
- SHARMAN, M. (1885). Rickmansworth, Herts. M.B., C.M. Glasg. D.P.H.
- SHARPLES, M. W. (1896). 57, Battersea Rise. M.B., C.M. Aberd.
- SHATTOCK, S. G. 4, Crescent Road, Wimbledon. F.R.C.S. Curator of Museum and Jt. Lect. on Pathology. Path. Curator, Royal Coll. Surg.
- SHAW, J. (1874). Burlington House, Willoughby Road, Hampstead, and 12, Chandos St., Cavendish Square. M.D. Lond.  
w 1874-5. 1st Year Student, 1st Coll. Prize.  
s 1875. 1st Coll. Prize.  
w 1875-6. 2nd Year Student, 1st Coll. Prize.  
H.P., A.H.P., R.A.
- SHAW, W. H. C. (1885). Normanton House, Normanton, Derby. M.A., M.B., B.C. Cantab.
- SHEARER, D. F. (1886). Woodside, 39, Anerley Road, Upper Norwood. B.A., M.B., B.Ch. Oxon.; F.R.C.S. 1888. 2nd Year Student, Half 2nd Coll. Prize.  
H.P., H.S., A.H.S., Clin. Asst. Throat Dept.
- SHEPHEARD, H. (1887). 2, Trafalgar Terrace, Mundesley, North Walsingham.
- SHEPHEARD, J. (1887). Cromer Rd., North Walsham, Norfolk. B.A. Cantab.
- SHEPHEARD, P. C. (1859). Aylsham, Norfolk.
- SHEPHERD, H. B. (1882). Peveril House, Castleton, Sheffield.
- SHEPHERD, F. J. (1873). 152, Mansfield St., Montreal. M.D. McGill; Professor of Anatomy, McGill University; Senior Surgeon Montreal General Hospital.
- SHEPHERD, T. W. (1873). Castle St. House, Launceston, Cornwall.
- SHEPPARD, W. J. (1878). 211, Upper Richmond Road, Putney. M.D., M.S. Durh.  
w 1880-1. 3rd Year Student, 3rd Coll. Prize.  
w 1881-2. The Treasurer's Gold Medal.  
R.A., H.P., A.H.P., A.H.S.
- SHERRINGTON, C. S. (1876). M.A., M.D., F.R.S. Prof. of Physiology, University College, Liverpool. Fellow of Gonville and Caius College, Cambridge. Physiological Society Hon. Sec.  
w 1882-3. 6th Year, Grainger Testimonial Prize.  
Lecturer on Physiology.
- SHIRRES, G. (1880). Melbourne, Victoria, Australia. M.D., C.M., D.P.H. Aberd.
- SHIRTLIFF, E. D. (1882). Holmwood, Cowleigh Road, Malvern, Worc.  
w 1882-3. 2nd Entrance Science Scholarship.
- SIDDALL, G. O. (1853). Late R.N.
- SIDDALL, J. B. (1860). (Travelling.) M.D., C.M. Aberd., D.P.H.
- SIKES, A. W. (1892). St. Thomas's Hosp. B.Sc. Lond. Demonstrator of Physiology.  
w 1892-3. 1st Year Student, 1st Entrance Science Scholarship, the Wm. Tite Scholarship.  
s 1893. 1st Year Student, 1st Coll. Prize.  
w 1893-4. 2nd Year Student, the Peacock Scholarship.  
w 1894-5. 3rd Year Student, 1st Coll. Prize, with 2nd tenure of Peacock Scholarship.  
s 1895. 3rd Year Student, 1st Coll. Prize.  
w 1895-6. 4th Year Student, the Mead Medal.  
w 1896-7. 5th Year Student, the Treasurer's Gold Medal.  
H.P.
- SIMMONS, E. L. (1856). St. Kilda, Victoria, Australia.
- SIMMONDS, H. M. (1847). 66, Camberwell Road.
- SIMON, Sir John, K.C.B. (1835). 40, Kensington Sq. F.R.C.S. (Hon.), F.R.S., Hon. M.D. et Chir. Munich, Hon. M.D. Dub., Hon. D.C.L. Oxon., Hon. LL.D. Cantab. et Edin. Cons. Surg. (formerly Surg. and Lect. on Path.) St. Thos. Hosp.
- SIMON, M. F. (1865). Singapore, Straits Settlements. M.D. St. And.; L.D.S. Edin.  
1866. 1st Year Student, 1st Coll. Prize.  
1869. 3rd Year Student, 3rd Coll. Prize; Prosector's Prize;  
Prize and Hon. Cert. for Surgery and Surgical Anatomy.



- SIMPSON, C. B. (1889).  
 SIMPSON, H. (1889). Market Weighton, East Yorks. B.A., M.B., B.C. Cantab.  
 w 1889-90. 3rd Year Student, 3rd Coll. Prize. A.H.S., Clin. Asst. Ear Dept.
- SIMS, D. (1888).  
 SIMS, G. S. (1880). The Hollies, Green Hill, Derby.  
 s 1881. 1st Year Student, 3rd Coll. Prize.
- SIMS, J. H. (1886). 5, London Street, New Swindon.
- SINCLAIR, D. (1887). 6, East Park Terrace, Maryhill, Glasgow. M.B., C.M. Glasgow.
- SINGH, B. J. (1888). Surg.-Capt. Bengal Army.
- SISSONS, W. H. (1857). 3, Priestgate, Barton-on Humber, Linc. J.P.  
 1858. Matriculation Examination-Physics, &c., Prize.  
 1859. Clinical Medicine, Prize;  
 Physical Society's Essay, Prize.  
 1860. 3rd Year Student, 2nd Coll. Prize;  
 Physical Society's Prize.  
 H.S.
- SKARDON, T. G. (1854). Brig.-Surg. I.M.S., Bengal. (Retired).
- SLATER, J. S. (1867). Evesham, Worc. J.P.  
 1868. 1st Year Student, 1st Coll. Prize.  
 1869. Physical Society's 2nd Year's Prize.  
 1870. 3rd Year Student, 2nd Coll. Prize;  
 Treasurer's Gold Medal.  
 H.P., R.A.
- SLAUGHTER, C. H. (1853). Insp.-Gen. R.N. (retired).
- SLAUGHTER, J. E. (1868).
- SLAUGHTER, W. B. (1866). Brig.-Surg.-Lt.-Col. Army.
- SLIPPER, T. (1831). 30, St. Saviour's Road, W. Croydon, Surrey.
- SLOCOCK, R. (1889). Portsmouth Royal Hospital.
- SMART, W. H. (1882). Polesworth, Tamworth, Warwk. M.A., M.B. Cantab.
- SMITH, A. (1878). Bank House, 54, Stockwell Green.
- SMITH, C. C. (1873). Redditch, Worcester. B.A., M.B. Cantab. H.S., R.A.
- SMITH, C. J. (1856). 2, Medina Villas, Brighton.
- SMITH, E. (1888). Wallace Lodge, Balham High Road, Upper Tooting. M.D. Lond.  
 w 1888-9. 1st Year Student, 2nd Entrance Science Scholarship;  
 The William Tite Scholarship.  
 s 1889. 1st Year Student, 1st Coll. Prize.  
 w 1889-90. 2nd Year Student, 1st Coll. Prize.  
 w 1890-1. 3rd Year Student, 2nd Coll. Prize.  
 s 1891. 3rd Year Student, 2nd Coll. Prize;  
 Treasurer's Gold Medal.  
 H.S., A.H.S.
- SMITH, E. L. T. (1873). 138, High Street, Wandsworth.
- SMITH, F. J. P. (1881). 103, East St., Walworth.
- SMITH, F. W. (1863). 40, Newington Causeway.
- SMITH, H. (1851). Belmont, Ryde, I.W. (retired).
- SMITH H. (1857). Blackrod, Chorley, Lanc.
- SMITH, H. E. (1887). Gleneagle House, Streatham. M.A., M.B., B.C. Cantab.
- SMITH, J. 23, Park Road, Plumstead, Kent.
- SMITH, J. (1892). M.A., M.B., B.C. Cantab.  
 H.S., A.H.S.
- SMITH, J. B. (1881). Dulwich.
- SMITH, J. H. (1891). Bank House, 54, Stockwell Green.
- SMITH, R. P. (1874). Res. Phys. and Med. Superint. Bethlem Royal Hosp. M.D., B.S., F.R.C.P.  
 s 1876. 2nd Year Student, 2nd Coll. Prize.  
 Res. Asst. Phys., H.P., A.H.P., H.S. A.H.S., Demonstr. of Pract. Phys.
- SMITH, S. L. (1870). 25, Argyle Square, King's Cross.
- SMITH, W. H. (1854). Cranmore, Royal St. West, Sandown, Isle of Wight.
- SMITH, W. H. (1877). Weston Lodge, Weston, Bath.
- SMYTH, H. J. (1882). South Molton, N. Devon.  
 w 1882-3. 1st Year Student, 3rd Coll. Prize.  
 s 1883. 1st Year Student, 1st Coll. Prize.  
 w 1883-4. 2nd Year Student, 1st Coll. Prize.  
 s 1884. 2nd Year Student, 2nd Coll. Prize.  
 w 1885-6. 4th Year Student, Treasurer's Gold Medal.  
 H.P., R.A., Clin. Asst. Skin Dept.
- SNAITH, F. (1861). 5, Pump Square, Boston, Linc. M.D., C.M. Aberd.
- SNOAD, E. H. (1849). Aylestone Park, Leicester.
- SOLLY, E. (1882). Strathlea, Coldbath Road, Harrogate. M.B. Lond.; F.R.C.S.; D.P.H.  
 w 1883-4. 2nd Year Student, 2nd Coll. Prize.  
 w 1885-6. Solly Medal and Prize.  
 Surg. Regist., A.H.S., R.A., Clin. Asst. Skin and Ear Depts.
- SOLLY, R. V. (1883). 40, West Southernhay, Exeter. M.D., B.S. Lond.; F.R.C.S.  
 w 1884-5. 2nd Year Student, Half 2nd Coll. Prize.  
 H.S., A.H.S., Clin. Asst. Skin Dept.

- SOLLY, S. E. (1863). Colorado Springs, Colorado, U.S.A.  
Med. Registr.
- SOMERS, C. D. (1893). Deodara, Surbiton. B.A. Cantab.
- SOUTH, R. E. E. (1882). Church Close, Boston, Linc.
- SOUTHERN, F. G. (1881). Pant-y-r-odin, Llandeibie, S. Wales.
- SOUTHERN, J. A. (1878). Friar Gate, Derby.
- SOWERBY, T. (1848). Welshpool, Montgomery.
- SPARKE, G. W. (1850). Mansfield, Notts.
- SPAULL, P. W. (1888). 1, Stanwick Road, West Kensington.
- SPEED, H. A. (1871).
- SPENCER, M. H. (1885). 95, St. Mark's Road, North Kensington. M.A., M.D., B.C. Cantab.  
H.P., Ophth. Asst.
- SPITTA, E. J. Ivy House, Clapham Common.
- SPRAKELING, R. J. (1854). 58, Merton Rd., Bootle, Liverpool. J.P.  
1856. Clin. Med. Prize.
- SQUANCE, T. C. (1880). 15, Grange Crescent, Sunderland. M.D., M.S. Durh.; L.S.Sc. Phys. and Path. Sunderland Infirm.
- STABB, A. F. (1885). M.B., B.C. Cantab. Obst. Tutor and Registrar St. Thomas's Hospital.  
w 1885-6. 1st Year Student, 1st Entrance Science Scholarship;  
The William Tite Scholarship.  
s 1886. 1st Year Student, 2nd Coll. Prize.  
w 1886-7. 2nd Year Student, The Musgrove Scholarship.  
s 1887. 2nd Year Student, 1st Coll. Prize.  
w 1887-8. 3rd Year Student, 2nd Tenure of Musgrove Scholarship, with 1st Coll. Prize.  
w 1888-9. Treasurer's Gold Medal.  
H.S., A.H.S.
- STABB, E. C. (1882). 57, Queen Anne Street. F.R.C.S. Jun. Dem. of Anat. and Demonst. of Pract. Surg. Chief Asst. Throat Dept.  
w 1883-4. 2nd Year Student, Prosector's Prize.  
s 1884. 2nd Year Student, 1st Coll. Prize. Resident Assistant Surgeon, Surg. Registr., H.S., A.H.S., R.A., Clin. Asst. Throat and Ear Depts.
- STABB, F. A. (1885). St. John's, Newfoundland.
- STABB, W. W. (1888). Croft Lodge, Torquay. B.A., M.D., B.C. Cantab.  
w 1889-90. 4th Year Student, The Mead Medal.  
H.P.
- STABLEFORD, F. B. G. (1893). 114, Edmund Street, Birmingham.
- STACY, J. H. (1883). 39, Exchange Street, Norwich.
- STADDON, H. E. (1887). Surg.-Lt. Army.
- STADDON, J. R. (1880). 6, Silent St., Ipswich.  
A.H.P.
- STADDON, W. J. (1881). The Priory, St. Nicholas, Ipswich.
- STAINER, E. (1893). South Parkes Road, Oxford. B.A., M.B., B.Ch. Oxon.  
H.P. Clin. Asst. Elect. Dept.
- STALLARD, H. (1889). Stow-on-the-Wold. B.A. Cantab.
- STANFORTH, J. W. (1887). Hinderwell, Yorks.
- STARES, C. L. B. (1888).
- STARK, M. D. (1875). 6, Broad St., Oxford. M.D., C.M. Trin. Coll. Toronto.
- STARTIN, J. (1870). 15, Harley St., Cavendish Square.
- SATHAM, R. W. (1878). The Hall, Cheddar, Somerset.
- STAVELEY, W. H. C. (1881). 13, South Eaton Place. F.R.C.S.  
H.S., A.H.S., A.H.P., Clin. Asst. Ear Dept.
- STEDMAN, S. B. (1889).
- STEEVES, G. W. (1880). 53, Parkfield Rd., Princes Pk., Liverpool. B.A. New Brunswick, M.D. Brux.
- STEPHENS, W. J. (1886). The Dispensary, Nottingham.
- STEVENSON, E. S. (1871). Strathallan House, Rondebosch, Cape Colony. M.D. Brux.; F.R.C.S. Edin.
- STEWART, C. Royal College of Surgeons, Lincoln's Inn Fields. Prof. of Comp. Anat. and Phys., and Conserv. of Museum R.C.S. Eng. F.R.S.  
Curator of Museum and Lecturer on Physiology and Comparative Anatomy.
- STEWART, C. H. (1888). Witheridge, North Devon.
- STILES, H. T. (1851). Spalding, Linc. M.D. St. And.; J.P.
- STILWELL, G. R. F. (1886). 14, Southend Rd., Beckenham, Kent. M.B. Lond.  
H.P.
- STOCKS, F. (1863). 421, Wandsworth Road.  
R.A.
- STOKER, G. (1880). 14, Hertford St., Mayfair, and Dunloe Castle, Killarney, Co. Kerry. M.R.C.P.I., J.P.

- STOKES, W. (1856). Buckingham House, 51, Foster Hill Road, Bedford (retired).
- STOKES, W. (1888). Pilgrims' Rest, Lydenburg, Transvaal. M.B. Lond.
- STONE, F. W. S. (1878). 50, Kempshott Rd., Streatham Common. H.P.
- STONE, W. G. (1889). 93, Denmark Hill. M.A., M.B., B.Ch. Oxon. F.R.C.S.  
H.S., A.H.S. Clin. Asst. Ear and Elect. Depts.
- STRANGE, R. G. (1890). 2, Belsize Avenue, Hampstead. H.S., A.H.S. Clin. Asst. Ear Dept.
- STRANGE, W. H. (1861). 2, Belsize Av., Hampstead, and 5, Grosvenor St. M.D., C.M. Aberd.
- STRIDE, J. (1861). Waratah, Newcastle, New South Wales.
- STRONG, G. The Chase, Ross, Herefordsh. M.D. Edin.
- STUART, J. B. Mere Oaks, Standish, Wigan. F.R.C.S. Edin., J.P.
- STUART, T. E. (1882). 30, West Street, Harwich, Essex.
- STURDEE, F. H. (1891). Sussex County Hospital, Brighton.
- SUGDEN, E. S. (1880). 77, Walton Vale, Aintree, Liverpool. M.D. Durh.
- SULLIVAN, E. H. C. (1880). 53, Bath Street, St. Helier, Jersey.
- SUMMERHAYES, H. (1860). Kingswood Park, nr. Bristol. B.A. Lond.  
1861. Matriculation Examination—Classics and Mathematics, President's Prize; Modern Languages, &c., Coll. Prize; Physics and Natural History, Coll. Prize;  
The William Tite Scholarship.  
1862. 2nd Year Tite's Scholarship.  
1863. 3rd Year Tite's Scholarship; Treasurer's Gold Medal.  
H.S., R.A., Surg. Registrar.
- SUMMERHAYES, W. (1855). Brightling Mount, Burwash, Sussex. M.D. Durh.  
1856. Matriculation Examination—Modern Languages, Prize.
- SUTCLIFF, E. (1860). Gt. Torrington, Devon. M.D., C.M. Aberd. Mem. Gen. Counc. Univ. Aberd.  
1861. 1st Year, 3rd Coll. Prize.  
1863. 3rd Year Student, 3rd Coll. Prize.
- SUTCLIFF, E. H. (1891). Gt. Torrington, Devon. M.B., B.S. Durh.
- SUTCLIFF, J. H. (1851). Farfield House, Ripley, Surrey (retired).
- SUTCLIFFE, J. (1867). Ashbourne House, 625, Wandsworth Rd. 1869. Prosecutor's Prize.
- SUTCLIFFE, W. G. (1888). F.R.C.S.  
w 1888-9. 1st Year Student, 1st Coll. Prize.  
s 1889. 1st Year Student, 2nd Coll. Prize.  
w 1889-90. 2nd Year Student, 2nd Coll. Prize.  
w 1891-2. 4th Year Student, The Cheselden Medal.  
H.S., A.H.S.
- SUTTER, R. R. (1892). Poplar and Stepney Sick Asylum, Bromley. M.B., C.M. Aberd.
- SUTTON, Rev. F. W. (1875). St. Barnabas Mission, Umtata, Pondoland, Cape Colony.
- SUTTON, H. M. (1878). Bagdad, Turkey-in-Asia.
- SUTTON, S. W. (1875). Quetta, India. M.D., B.S. Lond.  
H.P., A.H.S., A.H.P., R.A.
- SUZUKI, S. (1886). Tokio, Japan.
- SWALE, H. (1875). 23, Upper Richmond Road, Putney. M.B. Lond. A.H.P., A.H.S.
- SWALLOW, A. J. (1885). 5, Mount Edgcumbe Gdns., Clapham Rise. M.B., B.S. Durh.  
Clin Asst. Skin Dept.
- SWALLOW, J. D. (1859). Clifton Lodge, Clarence Rd., Clapham Park. M.D. St. And.
- SWEET, J. L. (1838). Tenbury, Worc.
- SWEETAPPLE, H. A. (1888). Adelaide, S. Australia. M.D., B.S. Durh.
- SWINDELLS, E. (1886). Torcross, S. Devon.
- SWINHOE, A. C. (1890). Park House, New Swindon, Wilts.
- SWINHOE, G. R. (1887). New Swindon, Wilts.
- SYMONS, R. FOX (1888). 34, Christ church Road, Streatham H.S., A.H.S.
- TAKAKI, K. (1875). Tokio, Japan. F.R.C.S., Director-General of the Medical Department Imperial Japanese Navy, Surgeon to the Tokio General Hospital.  
w 1875-6. 1st Year Student, 3rd Coll. Prize.  
s 1876. 2nd Coll. Prize.  
w 1876-7. 2nd Year Student, 1st Coll. Prize.  
s 1877. 2nd Year Student, 3rd Coll. Prize.  
w 1877-8. 3rd Year Student, 2nd Coll. Prize.  
w 1878-9. 4th Year Student; The Cheselden Medal;  
The Treasurer's Gold Medal.  
H.S., R.A., A.H.P.
- TAKAYASU, M. (1890). Shichome, Osaka, Japan.  
w 1892-3. 2nd Year Student, The Musgrove Scholarship.  
s 1893. 2nd Year Student,  $\frac{1}{2}$  1st and 2nd Coll. Prizes.  
w 1893-4. 3rd Year Student, 2nd tenure of Musgrove Scholarship.

- TANNER, H. (1895). Hartington House, Devonshire Road, South Lambeth. F.R.C.S.
- TANNER, M. B. (1857). M.D.R.U.I., M.D. St. And.
- TARZEWELL, J. (1843). Sturminster Newton, Blandford, Dorset. (retired).
- TATE, W. W. H. 57, Queen Anne St., Cavendish Square. M.D. Lond., M.R.C.P. Asst. Obst. Phys. Obst. Tutor and Registrar St. Thos. Hosp.
- TATHAM, E. (1873). 51, Cambridge Road, Hammersmith.
- TAYLOR, D. (1878). Hyla Kandy, Cachar, Bengal. M.D., R.U.I.
- TAYLOR, F. P. (1865). St. John, New Brunswick, Canada.
- TAYLOR, G. E. O. (1891). St. Thos. Hospital. H.S., A.H.S., Clin. Asst. Skin Dept.
- TAYLOR, S. (1869). 16, Seymour St., Portman Square. M.D., C.M. Aberd., M.R.C.P. Assistant Physician West London Hospital. Demonstrator of Anatomy.
- TAYLOR, S. J. (1874). 44, Prince of Wales Road, Norwich. M.B., C.M. Edin.  
w 1875-6. 2nd Year Student, The Musgrove Scholarship.  
w 1876-7. 3rd Year Student, 2nd Year Musgrove Scholarship, and 1st Coll. Prize.  
w 1877-8. The Mead Medal; The Treasurer's Gold Medal.
- TEALE, M. A. (1889). 38, Cookridge Street, Leeds.  
1894. Solly Medal and Prize.
- TEBB, W. S. (1883). Charlcombe, Boscombe Hill, Bournemouth. M.A., M.D. Cantab., D.P.H. Clin. Asst. Throat Dept.
- TEBBS, L. V. (1887). Christchurch, Hants.
- TERRY, J. (1884).
- THOMAS, D. E. (1873). Eastfields, Chepstow Road, Newport, Mon.
- THOMAS, J. T. (1882). Roslyn, Camborne, Cornwall.
- THOMAS, J. W. (1876). South Villas, Neath, Glamorg.
- THOMAS, P. C. (1884). 9, Royal Avenue, Chelsea.
- THOMAS, R. W. (1867). Temple Villa, Rye Lane, Peckham.
- THOMPSON, C. H. (1879). Jun. Constitutional Club, Piccadilly. M.A., M.D. Dub., M.R.C.P., D.P.H.
- THOMPSON, F. H. (1868). Cleobury Mortimer, Salop.  
1870. Prosector's Prize.
- THOMPSON, G. W. (1890). 13, Valley Bridge Parade, Scarborough. B.A., M.B., B.C. Cantab. H.P., H.S.
- THOMSON, G. J. C. (1873). 111, Sinclair Road, West Kensington Park. M.D. Durh.
- THORMAN, W. H. (1891). B.A. Cantab. Clin. Asst. Skin Dept.
- THORNELY, W. (1891). B.A., M.B., B.C. Cantab. Clin. Asst. Throat Dept.
- THORNTON, A. C. (1885). 11, Argyle Road, Castle Hill, Ealing.
- THORNTON, F. B. (1891). Osmaston Road, Derby. M.B., B.S. Lond. w 1894-5. 4th Year Student, The Mead Medal. H.P.
- THORP, A. E. (1889). 449, Lordship Lane, Dulwich.
- THUDICHUM, J. L. W. (1878). 11, Pembroke Gdns., Kensington. M.D. Giessen, F.R.C.P. Lect. on Path. Chem.
- THURNAM, W. R. (1886). City and County Asylum, Fishponds, Bristol. M.B., B.S. Durh.
- THURNEILL, H. L. (1889). 6, Woodville, Gravesend. M.A. Cantab.
- THURSTAN, E. P. (1874). 60, Herne Hill. M.D. Cantab.
- THURSTON, E. O. (1890). 27, Pantons St., Haymarket. M.B., B.S. Lond. F.R.C.S. Surgical Registrar.  
s 1892. 2nd Year Student, Half 1st and 2nd Coll. Prizes.  
w 1892-3. 3rd Year Student, Half 3rd Coll. Prize.  
w 1893-4. 4th Year Student, Cheselden Medal. H.S., A.H.S., Clin. Asst., Ear Dept.
- TIMOTHY, P. V. (1848).  
1851. Practical Midwifery, Prize.
- TIMS, H. W. M. (1889). 59, St. George's Square, Pimlico. M.D., C.M. Edin. Lect. on Biol. and Comp. Anat. Westm. Hosp. Med. Sch.
- TINLEY, W. E. F. (1891). 1, Marine Parade, Whitby, Yorks. M.B., B.S. Durh.  
w 1891-2. 2nd Year Student, 1st Coll. Prize.  
s 1892. 2nd Year Student, Half 1st and 2nd Coll. Prizes.  
w 1892-3. 3rd Year Student, Half 3rd Coll. Prize.  
s 1893 3rd Year Student, 2nd Coll. Prize. Obstet. H.P.
- TODD, F. (1879). 21, Finsbury Circus. L.D.S., Dent. Surg. Roy. Free Hosp.
- TODD, H. J. McC. (1872). Staff Surg. R.N.
- TOLLER, N. P. F. (1885).



- TOLLER, S. G. (1885).** St. Thomas's Hospital. M.D. Lond., M.R.C.P., w 1885-6. 1st Year Student, 2nd Entrance Science Scholarship.  
s 1886. 1st Year Student, 1st Coll. Prize.  
w 1886-7. 2nd Year Student, Half 1st and 2nd Coll. Prizes.  
w 1887-8. 3rd Year Student, 2nd Coll. Prize.  
w 1888-9. 4th Year Student, The Mead Medal.  
Med. Regist. and Demonstr. of Pract. Med., Res. Asst. Phys.  
H.P., H.S., A.H.S., Jun. and Sen. Ophth. H.S., Clin. Asst. Throat and Ear Depts.
- TOMBLESON, J. B. (1895).** B.A., M.B., B.Ch. Oxon.  
Obst. H.P.
- TOMPSETT, R. H. (1884).** 304, Walworth Road.
- TOMSON, W. B. (1879).** Park Street West, Luton, Beds. M.D. Durh.  
w 1879-80. 1st Year Student, 2nd Coll. Prize.  
s 1880. 1st Year Student, 2nd Coll. Prize.  
w 1880-1. 2nd Year Student, The Musgrove Scholarship, Prosector's Prize.  
w 1881-2. 3rd Year Student, 2nd Coll. Prize; 2nd Tenure of Musgrove Scholarship.  
s 1882. 2nd Coll. Prize.  
w 1882-3. Treasurer's Gold Medal.  
A.H.P.
- TONKING, J. H. (1882).** Chapel St., Camborne, Cornwall. M.B. Lond.  
w 1884-5. 3rd Year Student, Half 2nd and 3rd Coll. Prizes.  
w 1885-6. 4th Year Student, The Cheselden Medal.  
H.S., A.H.S., Clin. Asst. Ear Dept.
- TOOMBS, H. G. (1889).** 17, Scarsdale Terrace, Kensington.  
Ophth. H.S., Clin. Asst. Skin and Throat Depts.
- TOPPING, J. P. (1879).** Clarence House, Teddington, Middlx. M.B., C.M. Glasg. D.P.H.
- TOTSUKA, K. (1881).** Tokyo, Japan. Deputy Inspector General of Hospitals, Imperial Japanese Navy. F.R.C.S.  
s 1882. 1st Year Student, 2nd Coll. Prize.  
w 1882-3. 2nd Year Student, Half Musgrove Scholarship and 1st Coll. Prize combined.  
w 1883-4. 3rd Year Student, 2nd Tenure of Half Musgrove Scholarship, with 3rd Coll. Prize.  
A.H.S.
- TOWNSEND, H. W. W. (1893).** B.A. Cantab.
- TOWNSEND, M. (1865).** 24, Upper Phillimore Place, Kensington.
- TREADWELL, O. F. N. (1878)** Med. Off. H.M. Conv. Prison, Portland.
- TREDINNICK, E. (1871).** Penlu House, Craven Arms, Salop.
- TREVES, E. (1866).** 2, The Drive, Hove, Brighton.
- TREVES, W. K. (1862).** 31, Dalby Square, Margate. F.R.C.S.  
1863. Modern Languages and Modern History, Coll. Prize.  
1865. 3rd Year Student, 2nd Coll. Prize; Prosector's Prize.  
H.S.
- TREVITHICK, E. G. (1886).** 24, Promenade, Cheltenham. M.A., M.D., B.C. Cantab.
- TREVOR, H. O. (1877).** Surg.-Maj. Army.
- TRIBE, A. G. (1888).** Treorchy, Rhondda Valley.
- TRUMAN, C. E. (1871).** 23, Old Burlington Street. M.A. Cantab.; L.D.S., Dent. Surg. St. Thos. Hosp., Surg. Dent. Hosp. Lond.
- TUKE, A. W. (1891).**  
A.H.S.
- TURLE, A. (1870).** Chipping Norton, Oxon.
- TURNER, F. C. 15, Finsbury Square.** M.A., M.D. Cantab.; F.R.C.P., Phys. and Demonstr. of Path. Anat. Lond. Hosp.  
Res. Asst. Phys.
- TURNER, J. G. (1886).** 12, George Street, Hanover Square. F.R.C.S., L.D.S.
- TURNER, R. (1852).** Lewes, Sussex.
- TURNER, H. G. (1884).** 68, Portland Place. M.A., M.D., B.Ch. Oxon.; M.R.C.P., F.R.C.S., Asst. Phys., Physn. to Electrical Dept., Joint Lecturer on Forensic Medicine, Demonstrator of Morbid Anatomy. Teacher of Pract. Med., St. Thomas's Hospital.  
w 1885-6. 2nd Year Student, 2nd Coll. Prize.  
s 1886. 2nd Year Student, 2nd Coll. Prize.  
w 1886-7. 3rd Year Student, 3rd Coll. Prize.  
s 1887. 3rd Year Student, 1st Coll. Prize.  
w 1887-8. The Mead Medal.  
Res. Asst. Phys., H.S., H.P., Demonstrator of Morbid Histology.
- TYRRELL, W. (1872).** 104, Cromwell Road, South Kensington. Sen. Anaesthetist St. Thos. Hosp. Tel.: "Tyrrell, London."  
H.P., A.H.P., R.A.
- TYRRELL, W. (1850).** Claremont, Gt. Malvern, and 122, Victoria Street, London.  
1853. Ophthalmic Essay, Mr. Dixon's Prize.  
1854. Surgical Reports, President's Prize.  
H.S.
- TYRRELL, W. G. B. (1878).** Claremont, Great Malvern. D.P.H.



- UMNEY, W. F. (1885). Heatherbell, 15, Crystal Palace Park Road, Sydenham. M.D. Lond.  
w 1887-8. 2nd Year Student, 1st Coll. Prize.  
H.P., Jun. and Sen. Obst. H.P., Clin. Asst. Skin Dept.
- USHER, C. H. (1888). 3, Bon Accord Square, Aberdeen. B.A., M.B., B.C. Cantab.; F.R.C.S. Edin.  
Ophth. H.S., Clin. Asst. Throat Dept.
- USHER, T. S. (1855). Carlton House, Yeadon, Leeds. M.D. St. And.
- VALLANCEY, A. d'E. de. (1881). Willoughby House, Ravenscroft Park.
- VARDY, J. L. (1852). 72 and 74, Commercial Road, Portsmouth, and Portchester, Hants.  
1855. Practical Midwifery, Prize.
- VERDON, E. S. (1886). M.A., M.B., B.C. Cantab.
- VERDON, W. (1870). 47, Brixton Hill. M.D. Brux.; F.R.C.S. Eng.  
Med. Regist., H.S., Asst. Demonstr. of Anat.
- VICKERS, K. B. J. (1887). Wellington, Salop. M.B. Lond.
- VIVIAN, G. E. (1876). Staindrop, Darlington, Durham.
- VIVIAN, J. H. P. (1884). 12, West Kensington Mansions.
- VORES, A. (1874). 49, Grange Park, Ealing.
- VULLIAMY, J. T. (1889).
- WADD, F. J. (1861). Prospect House, Richmond, Surrey. M.B., C.M. Aberd., Surg. H.R.H. the Princess Mary Adelaide and H.S.H. the Duke of Teck, Surg. Richmond Hospital. R.A.
- WADD, H. R. (1887). Prospect House, Richmond, Surrey.
- WADES, J. W. B. Sydney, New South Wales. M.D., N.Y.; M.D. Aberd.
- WADIA, D. R. (1880). 49, Sopori Bang Road, Parel, Bombay.
- WAGSTAFFE, W. W. (1861). Purleigh, St. John's Hill, Sevenoaks, Kent. B.A. Lond., F.R.C.S.  
1862. Matriculation Examination--Classics and Mathematics, President's Prize. Physics and Natural History, Coll. Prize;  
Modern Languages, &c., Coll. Prize;  
1st Year Student, Treasurer's Prize.  
1863. 2nd Year Student, 1st Coll. Prize.  
1864. 3rd Year Student, 1st Coll. Prize;  
Physical Society's 3rd Year's Prize;  
Cheselden Medal;  
Treasurer's Gold Medal.  
Sen. Asst. Surg., Lect. on Anat. and Res. Asst. Surg. St. Thos. Hosp., Mem. Board of Exam. R.C.S.E., Exam. in Arts Apoth. Hall, and Med. Insp. H.M. Privy Council.
- WAINWRIGHT, A. S. R. (1878). Pembury Lodge, Tottenham, Middlesex.
- WAINWRIGHT, W. L. (1886). Brixworth, Northampton. M.B., B.S. Lond.  
H.S., A.H.S., Sen. and Jun. Obst. H.P.
- WAITES, R. F. (1885). East Bank, Rotherham. Lect. on Hygiene Rotherham Sch. of Sci.
- WAKEFIELD, M. J. (1884). 47, Christchurch Rd., Doncaster. M.B. Durh.
- WAKLEY, T., Jun. (1875). 5, Queen's Gate. Joint Editor of *The Lancet*.
- WALCOTT, R. B. (1839). Barbados, W. Indies. M.D. Lond., F.R.C.S.
- WALKER, A. W. H. (1886). Argyle House, Station Parade, Harrogate. M.D. Brux.
- WALKER, J. N. (1891).
- WALKER, R. F. (1883). The Lammas, Esher, Surrey.
- WALKER, Robt. (1853). Budleigh-Salterton, Devon. M.D. St. And.
- WALKER, W. W. (1890). 33, West Gate, Peterborough. B.A., M.B., B.C. Cantab.
- WALLACE, A. C. (1876). 1, Grange Terrace, Grange Road, Guernsey.
- WALLACE, C. S. (1886). St. Thomas's Hospital. M.B., B.S. Lond., F.R.C.S., Resident Asst. Surg.  
w 1887-8. 1st Year Student, Half 2nd Coll. Prize.  
s 1888. 1st Year Student, 2nd Coll. Prize.  
w 1888-9. 2nd Year Student, 1st Coll. Prize.  
w 1889-90. 3rd Year Student, 2nd Coll. Prize.  
Surgical Registrar, H.S., A.H.S., Sen. and Jun. Obst. H.P., Clin. Asst. Ear Dept.
- WALLACE, F. G. (1887). 104, Earl's Court Road. M.A., M.B., B.C. Cantab.  
Non.-Res. H.P.
- WALLACE, J. Carshalton, Surrey (retired).
- WALLACE, L. A. R. (1891). 24, Norfolk Crescent, Hyde Park. B.A., M.B. Oxon.  
H.S., A.H.S., Clin. Asst. Ear & Skin Depts.
- WALLER, A. W. (1883). 31, London Road, Stroud, Gloucester. D.P.H.
- WALLER, W. B. 153, Seven Sisters Road, Holloway.
- WALLFORD, W. Brome-Walton, 61, Appach Rd., Josephine Avenue, Brixton Hill.
- WALTER, E. C. (1886). Market Place, Wallingford.

- WALTERS, F. R. (1875). 60, Welbeck Street, and Ferndale, Fairfield Road, Croydon. M.D., B.S. Lond.; M.R.C.P., F.R.C.S., Phys. N. Lond. Consump. Hosp. and City Disp. A.H.P., A.H.S.
- WARD, F. H. (1862). 8, Lyndhurst Villas, The Park, Ealing.  
1863. 1st Year Student, Treasurer's Prize.  
1864. 2nd Year Student, 1st Coll. Prize; Physical Society's 2nd Year's Prize.  
1865. 3rd Year Student, 1st Coll. Prize; Physical Society's 3rd Year's Prize; Cheselden Medal; Treasurer's Gold Medal.
- WARD, W. F. (1882). Bawtry, Yorks.
- WARD, W. T. (1876). Stanhope, Canada. M.D., C.M. Montreal.
- WARE, E. E. (1884). 143, Haverstock Hill. M.D., B.S. Lond. H.S., A.H.S.
- WARE, H. S. (1889). B.A., M.B., B.C. Cantab.
- WARNER, A. (1891).
- WARREN, S. (1881). Kensington, Adelaide, S. Australia.
- WARRENER, R. (1850). Morborne, Peterborough. M.A. Cantab.
- WATERS, F. W. (1888). Revel, Berriew, Montgomery.
- WATERS, H. G. (1887). East Indian Ry. Co.
- WATERWORTH, E. A. (1865). 40, Quay St., Newport, I.W. M.D. Aberd.
- WATKINS-PITCHFORD, W. (1887). St. Jude's Vicarage, St. George's Rd., Southwark. M.B. Lond. F.R.C.S. H.P.
- WAY, F. W. (1852). Elm Grove, Southsea.
- WAY, J. H. F. (1886). 45, Fawcett Road, Southsea.
- WAY, J. P. (1860). Mile End Villa, Landport. R.A.
- WEARY, G. E. (1884). 61, Palmerston Road, Boscombe, Bournemouth.
- WEBB, F. (1890). Nelson Place, New-castle-under-Lyme.
- WEBBER, W. W. (1876). Crewkerne, Somerset.  
w 1876-7. 1st Year Student, 3rd Coll. Prize.
- WEBSTER, E. (1883). 32, Richmond Place, Brighton.  
w 1883-4. 1st Year Student, 1st Coll. Prize.  
s 1885. 2nd Year Student, Half 2nd Coll. Prize.
- WEBSTER, J. H. Whittlesea, Cambs.
- WEBSTER, M. H. (1858). Grafton, New South Wales.
- WEEKES, F. H. (1873). 16, Gillygate, York. F.R.C.S.  
w 1873-4. 1st Year Student, 3rd Coll. Prize.  
s 1874. 3rd Coll. Prize.  
w 1874-5. 2nd Year Student, 2nd Coll. Prize.  
s 1875. 3rd Coll. Prize.  
w 1875-6. 3rd Year Student, 3rd Coll. Prize. H.S., R.A.
- WELCH, C. H. (1859). 46, Upp. Rock Gdns., Brighton. F.R.C.S. Edin.
- WELCH, R. W. F. (1881). 61, Oxford Street, Southampton.
- WELCHMAN, E. (1869). Heckington, Lincs. H.S., H.P.
- WELLS, A. E. (1877). Cuckfield, Sussex. M.D. Lond.  
w 1877-8. 1st Year Student, 2nd Entrance Science Scholarship. H.P., A.H.P., H.S., A.H.S., R.A.
- WELSFORD, G. F. (1880). Gotham House, Tiverton, Devon. B.A., M.B. Cantab.
- WEST, C. J. (1879). The Grove, Fulbeck, Grantham.
- WEST, R. H. (1870). 10, Station Road, Taunton. M.A. Cantab.
- WESTON, G. H. (1882). Forest Lodge, Shirley, Hants. M.B., D.P.H. Cantab.
- WHATELY, S. H. (1886).
- WHEATON, S. W. (1882). 76, The Chase, Clapham Common. M.D. Lond., M.R.C.P., D.P.H., Physician to the Royal Hospital for Children and Women. Med. Insp. Local Govt. Board.  
s 1885. 3rd Year Student, Half 1st and 2nd Coll. Prize.  
w 1885-6. 4th Year Student, The Mead Medal. H.P., R.A., Demonst. of Physics.
- WHEELER, C. (1854). 96, Kennington Park Road.
- WHEELER, P. C. E. D'Erf. (1883). English Hospital, Jerusalem. M.D. Brux., F.R.C.S. Edin.
- WHEELER, M. (1892). 377, New North Road, Islington.
- WHELPTON, E. S. (1881). Gonville House, Beckenham Rd., Beckenham. M.A. Cantab.
- WHERRY, G. E. (1869). Corpus Bldgs., Cambridge. M.A., M.B., M.C. Cantab., F.R.C.S., Surg. Addenb. Hosp., Lect. on Surg. Univ. Camb. Asst. Demonst. of Anat.
- WHICHELLO, E. (1892). 44, Trumpington Street, Cambridge. B.A., M.B., B.C. Cantab.
- WHICHELLO, H. (1888). The Mount, Tattenhall, Cheshire.

- WHISHAW, R. R. (1883.) Larkstone, Birdhurst Road, South Croydon. B.A., M.B., B.C. Cantab., F.R.C.S., Surg. Croydon Hosp.
- WHISTLER, Rev. C. W. (1875). Stockland Vicarage, Bridgwater, Somers.
- WHISTON, P. H. (1882). Surg. Capt. Army. D.P.H.
- WHITAKER, S. M. (1886).
- WHITE, C. H. (1872). 4, East Circus St., Park Row, Nottingham. R.A.
- WHITE, E. F. (1876). Westlands, 280, Upper Richmond Road, Putney. F.R.C.S., Anæsthetist St. Thomas's Hosp. Tel.: "Inhaler, London." H.P., H.S., A.H.S.
- WHITE, M. (1888). 4, Burma Road, Stoke Newington.
- WHITEHEAD, E. T. (1886). Camperdown House, 118, Lavender Hill. w 1886-7. 1st Year Student, 2nd Coll. Prize. s 1888. 2nd Year Student, Half 2nd Coll. Prize.
- WHITEHEAD, J. L. (1860). Belgrave House, Ventnor, Isle of Wight. M.D. St. And.; M.R.C.P., J.P., Cons. Phys. Isle of Wight Co. Hosp. H.S.
- WHITMARSH, R. P. H. (1889). 7, St. Michael's Place, Brighton.
- WHITTINGTON, R. (1894). 100, Hazellville Rd., Hornsey Lane. B.A. Oxon. Clin. Asst. Skin Dept.
- WICKHAM, G. H. (1885). Fleet, Hants. M.B., B.C. Cantab. H.P., Clin. Asst. Ear Dept.
- WIGHAM, W. H. (1884). Old Grammar School House, Shrewsbury. M.B. Durh.
- WIGHTMAN, H. T. (1888). 580, Ecclesall Rd., Sheffield.
- WIGLESWORTH, J. (1878). Med. Superint. Co. Asyl. Rainhill, Lanc. M.D. Lond.; M.R.C.P., Lect. on Ment. Dis. Univ. Coll. Liverpool, Exam. in Ment. Dis. Victoria Univ.
- WILDE, L. (1883). Palace Chambers, Westminster. M.D. Durh.; M.R.C.P. Lond.; D.P.H.; Med. Off. Health Bedfordshire County Council. Physician Croydon Boro' Hosp.
- WILES, J. (1848). Dep. Surg.-Gen. Army (retired).
- WILKINS, G. H. (1872). 134, Brixton Road. M.D. Durh.
- WILKINSON, C. J. (1879). Leh House, Osborne Road, Windsor.
- WILLIAMS, A. H. (1869). Surg.-Lt.-Col. Bengal Army. M.B., C.M. Aberd.
- WILLIAMS, A. W. (1891). 4, Cumberland Gate, Richmond Road, Kew. M.B., C.M. Edin., D.P.H.
- WILLIAMS, C. J. (1874). Brookside, Woodhall Spa, Linc.
- WILLIAMS, D. C. L. (1883). Crowland, Peterborough.
- WILLIAMS, F. N. (1879). 181, High Street, Brentford.
- WILLIAMS, G. C. W. (1884). Dunstaffnage, 99, Wickham Rd., Brockley.
- WILLIAMS, G. F. C. (1874). Balcarres, 4, Brixton Hill.
- WILLIAMS, H. (1867). Moor Park, Harrogate, Yorks. (not in practice). J.P. 1868. 1st Year Student, 2nd Coll. Prize. 1869. 2nd Year Student, 3rd Coll. Prize. H.S.
- WILLIAMS, H. B. (1886). 78, Lewisham High Road. M.D. Brux.
- WILLIAMS, J. (1857). Swinton, Manchester. M.D. St. And. 1859. Clinical Medicine, Prize.
- WILLIAMS, L. L. B. (1885). Sidmouth, Devon. M.B., C.M. Glasg.
- WILLIAMS, P. M. G. (1852). Parrag House, Newport, Pembroke. 1854. Practical Midwifery, Prize.
- WILLIAMS, R. B. (1886). Aston Clinton Rectory, Tring.
- WILLIAMS, R. M. (1879). 35, Kensington Park Gardens. M.D. Lond. w 1879-80. 1st Entrance Science Scholarship. H.P., A.H.P.
- WILLIS, C. F. (1871). Surg.-Maj. Bombay Army. M.D. Durh., M.R.C.P. Edin.
- WILLOCK, E. H. (1886). 113, London Road, Croydon.
- WILLS, B. S. (1892).
- WILLSON, H. S. (1890). Station Rd., Byfleet, and Weybridge, Surrey. B.A. M.B., B.C. Cantab.
- WILSON, A. (1880). 4, Coburg Terr., Anlaby Road, Hull.
- WILSON, A. M. (1884). 1, Mill St., Cape Town. M.D., B.S. Durh.
- WILSON, S. (1880). 262, Oldham Rd., Rochdale.

- WINDLEY, W. (1882). Colston-Bassett, Bingham, Notts. M.A. Cantab.
- WINDSOR, C. W. (1891). Holly Lawn, Banbury. M.A., M.B., B.C. Cantab. H.P.
- WINDSOR, T. (1853). The Polygon, Ardwick, Manchester (retired).
- WINSTON, W. B. (1887). Cleveland House, Bounds Green Road, Bowes Park. B.Sc. Lond.  
w 1887-8. 1st Year Student, 2nd Entrance Science Scholarship.  
w 1888-9. 2nd Year Student, 2nd Coll. Prize.  
s 1889. 2nd Year Student, 1st Coll. Prize.  
w 1891-2. Solly Medal and Prize.  
Demonstr. of Physiology. Clin. Asst. Skin Dept.
- WINTERBOTTOM, H. (1844). 148, Liverpool Road, Birkdale, Southport, Lancs. Cons. Surg. St. Mary's Hospital, Manch.
- WINTERBURN, J. W. (1879). Clinton, Larkhall Rise, Clapham.
- WISHART, J. (1876). London, Ontario, Canada. F.R.C.S. Edin.
- WOAKES, A. B. (1880). 78, Harley Street. Surg. Lond. Throat Hosp.
- WOAKES, E. (1854). 78, Harley St., Cavendish Square. M.D. Lond. Sen. Aur. Surg. Lond. Hosp., Lect. on Aur. Surg. Lond. Hosp. Med. Sch., Surg. Lond. Throat Hosp.  
1857. 2nd Year Student, 2nd Prize Clinical Medicine, Prize.  
1858. Essay on Neuralgia, Mr. N. Smith's Prize;  
Surgery and Surgical Anatomy, Cheselden Medal.
- H.S.
- WOLFF, A. (1870). 4, Ilchester Gdns., Prince's Square, Bayswater.
- WOOD, E. J. (1874). Yalding, Maidstone, Kent. B.A., M.B. Cantab.
- WOOD, J. (1884). The Gables, The Common, Cranleigh, Surrey.
- WOOD, R. (1841). Driffield, Yorks. and The Red House, Robin Hood's Bay. M.D. St. And., J.P.
- WOODHOUSE, T. J. (1854). 11, The Hill, Putney. M.D. Lond., F.R.C.S.
- WOODHOUSE, T. P. (1874). Surg.-Maj. Army.
- WOODMAN, W. E. (1874). Oxford Lodge, Croydon. M.D. Durh.  
s 1875. 1st Year Student, 2nd Coll. Prize.
- WOODWARD, C. R. M. (1886). Russell Street, Toowoomba, Queensland.
- WORTH, E. H. (1888). East Dispensary, Richmond Row, Liverpool.
- WORTHINGTON, G. F. J. (1856). Thorncliffe, Poole Rd., Bournemouth. M.R.C.P.I.
- WRENCH, E. B. (1887). The Woodhouse, Bath St., Bakewell, Derby. M.B., B.C. Cantab.
- WRENCH, E. M. (1850). Park Lodge, Baslow, and Bakewell, Derbyshire. F.R.C.S.  
1851. Physical Society's Essay, Treasurer's 1st Year's Prize.  
Asst. R.A.
- WRIDE, F. G. (1867). Wootton Bassett, Wilts.
- WRIGHT, A. (1858). The Lodge, Romford, Essex.
- WRIGHT, E. H. (1882). Surg.-Capt. Madras Army.  
s 1885. 2nd Year Student, Half 2nd Coll. Prize.
- WRIGHT, S. F. (1884). St. Peter's Lodge, Eltham Road, Lee, Kent. M.D. Lond.
- WRINCH, E. P. (1888). Hill Crest, Ipswich. M.B., B.S. Durh.
- WROUGHTON, W. C. H. (1885).
- WYMAN, C. (1886). Red Brae, 18, Putney Hill. M.A., M.D., B.C. Cantab.; F.R.C.S.  
w 1889-90. Solly Medal and Prize.  
H.P., H.S., A.H.S.
- WYMAN, W. S. (1851). Red Brae, 18, Putney Hill. M.D. St. And., F.R.C.S.  
1852. Matriculation Examination, Scholarship.
- WYSARD, A. T. (1887). Surg. R.N.
- YEOMAN, C. (1883). Kipping House, Thornton, Bradford, Yorks. B.A., M.B., B.C. Cantab.  
R.A.
- YEOMAN, S. (1885). Clark's Hill, Prestwich, Manchester. B.A., M.B., B.C. Cantab.
- ZEIDAN, Selim. (1886).



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